JUL 24 1933

HYGEIA

The HEALTH MAGAZINE

PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION

February, 1933

Solon R. Barber: Quelling the Quacks

Anna Steese Richardson: What Sixty Years Have Taught Me About Doctors

25 Cents

100 IN 1915

YOU HARDLY THINK OF THEM NOW

Typhoid, diphtheria, diarrhea—you hardly give them a thought today as perils in the paths of your babies. Yet only a few years ago these were taking a terrible toll in infant lives. Thousands of children everywhere were doomed as epidemics swept the country.

From 1915 to 1929 the mortality rate of infants under 1 year declined, in the United States birth registration area, from 100 to 68 per 1,000 births. Provisional figures for 1930 show a rate of 64; for 1931, 60. And it is estimated that for 1932 the rate has declined still further, to about 55.

In these troublous days it is encouraging to remember that through bad times and good, medical science—the wonderful science of saving lives—shows progress as steady as it is incredible. By co-operating with and helping to support public and private health agencies, by relying on the advice and guidance of your family physician, by taking advantage of the preventive measures at your disposal, you are contributing definitely to that progress.

MELLIN'S FOOD CO. *of* NORTH AMERICA

Dedicates this page to Healthful Living

55 IN 1932

HYGEIA, the Health Magazine, is published monthly by the American Medical Association, 535 North Dearborn Street, Chicago, Ill. Yearly subscription price, $2.50; for foreign postage add 75 cents. Volume 11, Number 2. Entered as second-class matter March 21, 1923, at the postoffice at Chicago, Ill., under the Acts of March 3, 1879. Acceptance for mailing at special rate of postage provided for in Section 1,103 Act of October 3, 1917, authorized March 21, 1923.

HYGEIA

THE HEALTH MAGAZINE

Published by the American Medical Association » » » Edited by Morris Fishbein, M.D.

Volume 11 FEBRUARY, 1933 Number 2

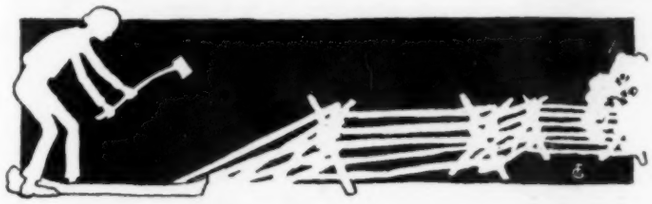


TABLE OF CONTENTS

COVER DESIGN
Alan Hughes PAGE

MEDICAL PROGRESS IN 1932 ... 106

SIXTY YEARS—WHAT THEY HAVE TAUGHT ME ABOUT DOCTORS ... 107
Anna Steese Richardson

VALENTINES ... 112
Frances G. Klan

THE HEART OF A CHILD ... 113
Paul D. White

THE PIONEER FAMILY DOCTOR ... 116
Frank Fischer

ATHLETICS FOR THE ATYPICAL ... 118
R. K. Atkinson

QUELLING THE QUACKS ... 123
Solon R. Barber

IS IT RHEUMATISM OR ARTHRITIS? ... 126
Maurice F. Lautman

LAYS FOR LOVING PARENTS: 1. SAFETY LAST ... 128
Berton Braley

THE HIGH SCHOOL NURSE ... 129
B. Faye Miller

THE FINAL ILLNESS OF WASHINGTON ... 132
W. A. Wells

WHY THINK ABOUT EATING? PART I ... 136
Henry J. Gerstenberger

POWDERED MILK ... 140
James A. Tobey

HEALTH PURSUITS IN PICTURES ... 143; 163

TRAINING FOR ATHLETICS AND HEALTH—CHAPTER II 144
Alfred E. Parker

FORTY YEARS OLD—OR FORTY YEARS YOUNG?—PART II ... 148
R. W. Scott

FOODS—THEIR SELECTION AND PREPARATION. MENU MAKING ... 152
E. M. Geraghty

RADIUM ... 156

THE RADIOLOGIST ... 157
L. J. Menville

INCINERATION ... 159

SCHOOL—OR A JOB? ... 160
Hugh G. Rowell

HEALTH BY THE CLOCK ... 164
Marguerite Gode

NATIVE DISHES, DINING CUSTOMS ... 166

SCHOOL AND HEALTH ... 168

NEW BOOKS ON HEALTH ... 172

QUESTIONS AND ANSWERS ... 173

CONTRIBUTORS TO THIS ISSUE

● DR. PAUL D. WHITE, Boston internist, describes the structure, work, development and diseases of the heart. . . . ANNA STEESE RICHARDSON, who writes on "Sixty Years—What They Have Taught Me About Doctors," is director of the Good Citizenship Bureau, *Woman's Home Companion*. . . . R. K. ATKINSON, whose article, "Athletics for the Atypical," deals with the borderline of mental instability, is affiliated with the Boys' Club of America.

● DR. SOLON R. BARBER begins a new series of articles, entitled "Quelling the Quacks." Dr. Barber is in charge of the information service for the Food and Drug Administration of the U. S. Department of Agriculture. . . . DR. MAURICE F. LAUTMAN is director of the department for the study of arthritis, Levi Memorial Hospital, Hot Springs, Ark. . . . BERTON BRALEY, poet, novelist and essayist, is the author of a group of "Lays for Loving Parents," the first of which appears under the intriguing title, "Safety Last."

● In "The Last Illness of Washington," DR. WALTER A. WELLS, an otolaryngologist of Washington, D. C., sums up the results of an intensive study. . . . DR. HENRY J. GERSTENBERGER is professor of pediatrics, Western Reserve University. His paper, "Why Think About Eating?" was originally presented, Jan. 17, 1932, as one of a series of public health lectures sponsored by the Academy of Medicine of Cleveland and made possible by a contribution to the academy's Health Education Foundation by the S. M. A. Corporation of Cleveland. . . . B. FAYE MILLER, R.N., describes the work done in the home nursing department of the DeVilbiss High School, Toledo, Ohio.

● DR. R. W. SCOTT, professor of clinical medicine, Western Reserve University, completes the article, "Forty Years Old—or Forty Years Young?" which was begun in the January issue. . . . JAMES A. TOBEY, DR. P.H., New York City, is co-author of the book on milk, "The Most Nearly Perfect Food," and has been a frequent contributor to HYGEIA. . . . ALFRED E. PARKER is director of physical education, Berkeley (Calif.) High School.

● DR. L. J. MENVILLE is editor of the *Journal of Radiology* and assistant professor of medicine and roentgenology, Tulane University of Louisiana School of Medicine. . . . DR. HUGH GRANT ROWELL, the author of many medical works, is assistant professor of health education, Teachers College, New York City. . . . MISS E. M. GERAGHTY, food consultant, discusses the elements of an adequate diet and gives hints concerning food combinations and menu details.

● MARGUERITE GODE, creator of "Young Prince Healthy Boy" whose adventures have long delighted young readers of HYGEIA and HEALTHYLAND, spins a charming fantasy about a faithful old clock.

Published monthly by the American Medical Association, 535 North Dearborn Street, Chicago. Subscription price $2.50 a year. Single copies 25 cents. Foreign subscriptions $3.25 a year.

Copyright, 1932, by the American Medical Association. All rights reserved.

February, 1933

EDITORIAL

Medical Progress in 1932

MEDICAL discoveries in any year usually represent the culmination of many years of work. In 1932 was announced the discovery of a product to be given in agranulocytic angina, also called malignant neutropenia. This preparation overcomes to some extent a sudden deficiency of white blood cells, characteristic of this disease.

A new drug, called carbarsone, was developed for use against amebic dysentery. The drug is derived from arsenic.

Vitamin D and concentrates of vitamin A were apparently isolated in several places. New vitamin preparations were made from the oil of the halibut liver and from the oil of the salmon liver.

It was found that methylene blue could be used as an antidote to poisoning by potassium cyanide and by carbon monoxide.

New experience was developed with the active principle from the cortex of the suprarenal gland. It was also discovered that there may be excessive action of the parathyroid glands, leading to serious crippling of the body because of withdrawal of calcium from the bones. This is overcome by surgical removal of the parathyroid glands.

ATTENTION was given to the development of preparations of mucin to be used in ulcer of the stomach. The mucin acts as a protective coat and thus prevents action by the acid of the stomach.

A method was developed for determining the sex of a child five months before birth. Further studies were made on the active principles of the sex glands in men and women.

New attention was given to the possibility that germs change their character and their virulence from time to time. This is evident in the special studies being made on the diphtheria organism and on meningitis.

New x-ray tubes were developed in forms exceedingly small and also in forms capable of delivering higher activity than ever before. Methods are also under experimentation and occasionally announced for visualizing almost every organ and tissue of the body with the x-rays combined with the injection of substances that localize in certain tissues and make them opaque to the x-rays.

A VACCINE was developed for use against Rocky Mountain spotted fever, prepared from extracts of the ticks that carry the disease. New studies were made on vaccines for use in pneumonia, particularly in that type caused by the germ of type two.

Special interest attaches to the expanding use of oxygen in the treatment of disease and to the development of devices for forcing breathing where paralysis interferes.

Special studies were also made on the application of heat in the control of various diseases, particularly heat developed by electrical methods, such as placing the person between electrical fields or passing current through the body.

Evidence was developed indicating the gradual appearance in the United States of cases of a condition called lymphopathia venereum, also lymphogranulomatosis inguinal, a form of infectious swelling of the glands in the groin, formerly limited to tropical regions but now found in many cities in this country. Physicians are studying its occurrence, the method of transmission and new drugs for its control.

THE END of the year was marked by the publication of the final Report of the Committee on the Costs of Medical Care, which, after five years of study, recommended group medical practice with payment on a group basis, either through insurance or through taxation. This report was opposed by a minority report which said that the general practitioner must continue to hold the central place in medical practice and that no system must be developed which would interfere with the personal relationships between physician and patient. The Commission on Medical Education made a report, after seven years of study, opposing mass medical practice and pointing out that there exists a possible oversupply by 25 per cent of physicians.

The Nobel prize in Medicine was awarded to Drs. Charles Scott Sherrington of Oxford University and Edgar Douglas Adrian of Cambridge University, particularly for studies of reactions of nerves, the dynamics of the nervous system and the relationship of nervous reaction to nervous disease.

Special attention was paid to the effects of the depression on health. Apparently the people's health is now the best that it has ever been, but physicians anticipate serious results from malnutrition, bad housing, overcrowding and exposure caused by financial stress.

Sixty Years

What They Have Taught Me About Doctors

By
ANNA STEESE
RICHARDSON

Anna Steese Richardson and her grandchildren.

WHAT DO YOU DO when you wake after a restless, feverish night to find that you have a severe cold? Or when your husband comes home suffering with acute indigestion and says he is going to bed without any supper? Or when Junior comes in from the playground or beach exhibiting a rash between his fingers or toes and asks for something to stop the itching? What do you, as wife, mother, and guardian of your family's health, do?

Do you open the medicine closet wondering what you have on hand to meet the emergency? Or do you stop on the porch or back steps long enough to ask your neighbor what she would do in such a case? Or do you run down to the drug store on the corner and ask the young clerk who sold you that lovely box of White Lilac face powder last week what he thinks would help your cold, relieve John's intestinal cramps or soothe Junior's itching skin? Or do you telephone your family physician to drop in and see what is wrong with the patient?

Great American Sport—Gambling with Health

Nine chances out of ten, times being as they are, you will try one of the expedients first mentioned. You will wait until morning to call in the doctor. By that time your cold may loosen up, or the cathartic may relieve John's indigestion, or that nice green salve in the pretty opaque glass jar will clear up the rash on Junior's hands and feet. We Americans have developed the habit of self diagnosis and self medication to the *n*th degree. We seem fairly to glory in gambling with our health, if not with our very lives.

In pioneer days, when physicians had to travel slowly in buggies or on horseback over almost impassable roads, our grandmothers could be excused for keeping simple remedies on hand for use in emergencies or for administering before the arrival of a doctor. Such remedies were harmless, but this cannot be said for many of the patent nostrums, headache cures, sedatives and heart stimulants sold along with lip sticks, tooth pastes and chocolate bars at the corner drug store these days. And with a telephone in practically every home and an automobile in every doctor's garage there is small excuse for delay in having a sudden illness expertly diagnosed and correctly treated. Only the doctor's fee—and of that I shall talk later!

A Mystifying Message

The urge to write this article came on a clear, bracing morning, the kind of a morning when one sits down at the breakfast table feeling that the poet spoke truly: "All's right with the world." With the second cup of coffee my Norwegian maid-of-all-work laid a yellow envelope beside my plate and stood in respectful, anxious silence while I read the message. The words, however, did not have any more meaning for me than they would have had for her:

STOP TAKING BLANK MINERAL WATER STOP VERY DANGEROUS STOP MAY BE MATTER OF LIFE AND DEATH STOP WRITING

MARY D.

A writer receives many strange communications. When her name appears over an article on any controversial subject she may be

Stop consulting your neighbor about your aches and pains!

deluged with letters, friendly, unfriendly or fantastic. But this communication puzzled me. I could not recall having drunk a glass of this mineral water, and, so far as I knew, my former classmate Mary D. was in her right mind. Well, she was writing. In due time I would be fully informed concerning the telegraphic warning. So the maid carried away the breakfast dishes and I picked up my morning paper. On the third page I came on a column story which made me reach for Mary's telegram. I had caught the connection between the news of the day and her message.

The newspaper writer was unraveling the mystery surrounding the death of a prominent man. An autopsy had shown that his bones had turned to a jelly-like substance. Eminent medical men had agreed that this unusual condition had been caused by the drinking of water charged with radium as a cure for rheumatism. The article closed with a warning against cure-alls in the form of synthetic mineral waters.

Mary D. and the Miraculous Cure-All

My memory traveled back six months. Yes, it was Mary D. who had urged me to try this wonderful water. She knew of three cases in which there had been almost miraculous cures of rheumatism. She was drinking the water herself and feeling much better though she had not yet finished the first bottle. It cost $3 a gallon, could be had in 6 gallon cases only and must be ordered direct from the plant located in a small midwestern city. However, if it could relieve rheumatism, what price cash or trouble?

Being the sort of person she is, more interested in human ailments than in anything else in the world, Mary had offered to take me in her car to call on one of the "cures." There is no use in arguing with a person of Mary's type! It is far easier to seem interested and to carry away the advertising matter she presses on one.

It happens that I do not suffer with rheumatism. I did not have any idea of investing in any "cure"; but as I read the literature on my homeward journey, I became interested in its subtle suggestions to the middle-aged about diseases of deterioration and its crafty claims for the product it exploited. So I stopped off to discuss it with the local druggist, a highly ethical dealer who does not sell soda, cut-rate books or beverage shakers, but who does know the drugs he compounds.

Yes, he had heard about it. The makers had built up a big mail order business, partly by wily advertising, partly by word-of-mouth reports of remarkable cures. But my druggist did not carry the water in stock.

The Philosophic Pharmacist

"It stands to reason, Mrs. Richardson," he explained, that any medicine or mineral water strong enough to dissolve or soften the chalky deposit that causes rheumatism would destroy the bony tissue also. As a pharmacist, I believe that many of these synthetic mineral waters are charged with radium, and radium is a product of whose action some of our best scientists are still suspicious. It may be beneficent. It may be totally destructive. Take no chances on any water which your physician does not prescribe."

Mary's special delivery letter which followed her telegram within ten hours was slightly incoherent. Why shouldn't she believe in Blank Mineral Water? Hadn't she seen the cures with her own eyes? Hadn't she felt better for taking it? She would have continued to drink it if her husband hadn't had a cut in salary—and when she didn't have rheumatism anyhow! But that shocking article in the paper! Why, her blood had run cold. Would I please write or telegraph her whether I had used it and whether my doctor could discover any bad effects?

None of us want to give our friends a bad hour, but Mary had it coming to her. Suggesting remedies to friends has been Mary's favorite indoor and outdoor sport since girlhood. At college she would offer a classmate her favorite healing salve when what the wound needed was a disinfectant to keep it open. If one had a

hacking cough, she rushed in with a mixture that had saved one of her family stricken with bronchial pneumonia. Mary should have studied medicine. Her bedside manner would probably have been a trifle aggressive, but medical training might have made her a trifle more cautious.

And Mary is only one of thousands, yes, hundreds of thousands of self appointed prescribers for the ills of others, relatives, friends and fellow travelers.

Where Ignorance Is Not Bliss

Cross the ocean, first, second or tourist class; sneeze or turn green around the mouth and nose, and some fellow traveler will beat the deck steward to your side, the ship's doctor to your cabin, chanting the wonders which his or her favorite remedy will perform.

Cross the continent by train, and the woman in the opposite compartment will press on you her favorite remedy for car sickness or headache when all you need is a walk in fresh air at the next stop. Pass one sleepless night in a motor camp, and in the morning you will be hedged in with fellow campers urging on you the world's best cure for insomnia.

Go to the mountains and break out with a rash. You may be sure that a fellow boarder will prescribe the ointment that will cure poison ivy—yes, every newcomer catches it. So you use the recommended ointment faithfully but futilely until the irritation finally drives you to a doctor; then you learn that you have hives, probably caused by eating too many strawberries. Under the physician's care the trouble disappears in twenty-four hours, and you swear you will never take a layman's advice again.

However, the next year you go to the seashore, and an entirely different rash breaks out on your extremities. You wonder if it is sunburn or the bites of poisonous mosquitoes. The lady who spied your efforts to refrain from scratching gives your arm an inspection.

"Oh," she exclaims in sympathetic tones, "that's not bites, that's eczema. I recognized it instantly. Both of my nephews had it. We cured it with the most wonderful salve. I have some in my room. Just wait a minute."

But her ministrations are not effective, and eventually you consult the hotel physician—which you might better have done at first. He diagnoses the trouble promptly as a poison from overindulgence in shell fish to which you are not accustomed in your inland home. He puts you on a strict diet, relieves the irritation with a simple lotion or an ointment and sets you free from pain to enjoy the remainder of your vacation.

These are minor ailments and minor discomforts, but in more serious ills, self diagnosis and self medication may have disastrous results. Among my good friends is a registered nurse to whose training have been added gifts which come of the Lord: common sense, an ability to read human nature amounting almost to genius, and a keen sense of humor. Her rare visits to former patients are most welcome. On one such occasion she learned that the husband of an ex-patient was confined to his bed with "acute indigestion," a trouble which often appeared when he had passed through some special nervous strain. This time, however, his favorite remedy had not relieved the pain. If he was not better by night his wife said she would give him an enema. He really could not go on like this.

No mention, you see, of calling in the doctor. The trouble had always passed before. Why not this time?

The nurse asked whether her hostess would like her to take a look at the sick man. She might be able to suggest something more effective. She did. She suggested a doctor. It was a case of typhoid. How did her trained eye recognize the disease? First, by the way he lay on the bed. Then by the unmistakable spots on his abdomen.

Yes, he lived. The long-suffering human body survives an amazing amount of abuse!

Mischievous Ministrations of the Misinformed

A similar case occurred on shipboard during one of my transatlantic trips. When one of the four women at my table in the dining salon failed to put in an appearance at several meals, the customary inquiries were made. "No," explained her traveling companion, "she's not seasick. She's a fine traveler. It's an attack of laryngitis. She often has it at home. She has one of those New England throats, you know. I'm giving her quinine and rubbing her throat with Blank." "Blank" was a widely advertised lubricant.

Twenty-four hours later, the patient was in the ship's hospital fighting bronchial pneumonia. An observant steward had reported his suspicions of her true condition to the ship's doctor.

Those who attend large conventions either as delegates or as observers can recall "near-tragedies" which have occurred during these gatherings. It was in a lovely and hospitable southern city that a northern delegate was stricken with what she and her roommate diagnosed as indigestion caused by overindulgence in a Brunswick stew which had been served at a barbecue given in honor of the convention guests. A druggist recommended several rem-

edies for indigestion, and two were selected. To insure quicker recovery the two remedies were taken alternately every hour. At the end of the day the patient's condition became worse. A frightened chambermaid suggested the hotel doctor, and while fellow club-women carried out their elaborate program in the hotel ballroom, their associate was rushed to a hospital for the removal of her appendix. There was time only to secure the telegraphic permission of her husband, who could not reach the scene until the wife had been pronounced out of danger. With another twenty-four hours of delay the disease might have progressed beyond the point where surgery could have saved the patient's life.

Suggesting remedies was always Mary's favorite sport.

The Dangers of Delay

From the same hotel a delegate suffering with pleurisy was taken by ambulance to the drawing room of a northbound train. Her one thought was to reach her own home and physician. Medical ethics forbade local doctors to do more than warn her that the trip held elements of danger. When she reached New York, pneumonia had developed. Two weeks later she died of heart trouble. Lack of medical attention at the beginning of the attack, overdosing with drugs that stimulated the heart action, shock when a doctor was finally summoned, and the exhausting trip by train contributed to the ultimate tragedy.

One need not leave home, however, to study the evils of self diagnosis. One of my neighbors, a woman in the prime of life, recently remarked: "I am perfectly miserable—nervous as a witch. I wake up in the night feeling as if I were smothering, and when I bend over or stand up suddenly, I am blind as a bat, or my head opens and shuts like an accordion."

"Doing anything about it?" I inquired casually.

"Yes, I'm taking aspirin, but it doesn't help. What I need is a change. I'm going out to Lake Mahonk for a week."

"Without seeing your doctor?"

"What's the use? It's just nerves. I'm fed up with planning meals and settling the children's quarrels and telling Jack where he left his pipe. What can a doctor do about things like that?"

Precious little, perhaps, but still he might correct the physical conditions which make her feel unequal to solving domestic problems. Tired she may be and bored, but probably a physician could trace "blind spells" and shortness of breath to something more local than household routine.

A hotel doctor once told me that most of the ailments which attack vacationists are due to the fact that the patients needed medical attention before they left home. Robbed of the stimulus of business or household duties, suffering perhaps from the nostalgia which attacks almost all persons who travel at rare intervals, they have a complete physical and nervous collapse.

In an age when press, platform and pulpit preach preventive medicine, when popular magazines emphasize the importance of periodic medical examinations, when state, county and city health departments supply intelligent lectures on health and hygiene, and when educational bureaus of all great insurance companies conduct campaigns for the prolongation of life through health habits, it seems incredible that men and women who can read and hear should continue the pursuit of cure-alls and risk their lives on the word of those who write clever advertisements.

Personal Experience—a Strong Argument

This is not a defense of the medical profession. I have met many stupid and incompetent doctors; but I still should rather take my chances on a dull, slow thinking doctor than on a drug store clerk trained to make a sale to every customer, or on a neighbor who does not know the difference between a saline and a lubricating cathartic. Neither is this a theoretical essay on modern preventive medicine. It is based on actual experience, a chapter from my own personal life; there can be no stronger argument than this for or against any theory.

At 67 I am a shining example of what doctors can do to keep in order that magnificent machine, the human body.

Seven years ago, after thirty years of grinding work in an exacting and stimulating profession, to say nothing of supervising as much as a wage earning mother could the health, education and social life of three growing chil-

dren, I had one of those all-round physical smashes which usually lead to an operating table, a sanatorium or chronic invalidism. Symptoms appeared like weeds after a rain. X-ray examinations revealed all sorts of misplacements and other things which I cannot spell. Specialists held consultations. Nurses took grim possession of my once cheerful apartment. Flowers arrived in boxes and baskets. My children, shocked, unbelieving but red-eyed, came and went. I made a new will.

And then for apparently no reason whatever something inside me turned over and I was better. I have always thought that a wise though rather morose British nurse turned the trick. She closed the door to visitors, threw more medicine down the bathroom drain than into my throat and made me so perfectly comfortable that the urge to live revived. Nature took its course, and a good course it was, indeed.

"The Common, Garden Variety of Doctor"

When I moved from the noisy, stimulating city to a suburb where I could make a garden and go to bed early, I looked about for a common, garden variety of family doctor with no specialty. Our first extended interview was something I will never forget. He gave me as thorough an examination as any of the specialists who had assisted in snatching me from the jaws of death. When we met again, he informed me that so far as the human eye and ear and modern electrical equipment could discover I was physically sound; that is, every organ was clean, healthy and perfectly capable of performing its duties. But I had overworked my body and my brain for many years. If I would lead a more normal life, check up on symptoms which might indicate some organic disturbance, he thought I could live and work for many years. To a woman of my temperament, with a tremendous zest for living and for the work I have grown to love almost passionately, this verdict brought indescribable happiness. I was ready and eager to follow his orders.

One stipulation he made when he took on my case: I was never to take any drug without consulting him or another physician if I was taken ill away from home. My system, he explained, was extremely sensitive to drugs. An overdose might disturb my physical equilibrium seriously. Some drugs would overstimulate and others would depress my heart action. I was not to experiment.

That was seven years ago; and I am still holding what we women like to term a man's job, still directing the activities of several assistants, still handling a heavy correspondence and still loving to live.

On the first of every month I still go to that doctor for a thorough examination. He checks up my heart action and my blood pressure. He counts the red corpuscles in my blood and knows exactly how every part of my body is working.

I am not entirely free from illness. A business woman cannot always safeguard her health as she should. I must go out in all sorts of weather, make hard trips in emergencies and sometimes overwork. But if I have a cold, my doctor has me on the job again within forty-eight hours. If my head aches, he traces the cause, and I am back at my desk the next morning.

One time he caught me walking badly, and he sent me to the best man he knew to cure a fallen arch. I complained of a pain behind my ear. He ordered me to have my glasses changed, and the pain never reappeared.

He is no miracle worker, my doctor, but he and I cooperate to keep my body in good working condition, my mind and soul free from fear and my heart sound. I do not say he could do this for every one. Behind me runs a long line of healthy ancestors. To them I owe the physical comeback which I staged at 60. But to the doctor I have had for seven years I owe my firm belief that periodic examinations and preventive medical care can prolong life and zest for living.

What more could any human being ask?

"But," I hear some one say, "all this is so expensive."

What Is Your Health Worth to You?

Yes, that terrible illness of 1925 was expensive. It almost reduced me to bankruptcy. But during the past seven years, my medical care has not been costly. It has been one of the smallest items in my budget, exactly 4.4 per cent of my income. In figuring this percentage, I have counted only those dollars and cents paid for visits to or from my doctor, and for drugs and medical supplies. I am not taking into account what I have saved in time and energy, both of which are, of course, of the utmost importance to a writer.

Is your health worth 4.4 per cent of your income to you? If it is worth that much to feel well, fit to do your work to your own satisfaction and to your employer's, to enjoy your food, your garden, a good game of bridge or a stimulating club meeting, then try the plan. Cut out self diagnosis and self treatment. Stop consulting your druggist or your neighbor about your aches and pains. See your doctor instead. He knows your reaction to drugs. You and your neighbors assuredly do not.

Century Photos

VALENTINES

A little girl and a little boy
Had many things to do
With paper lace and lots of paste
And colors red and blue.

Little minds and hands worked hard,
And how the scissors flew
To make a big lace valentine
To show their love for you!

—Frances G. Klan.

THE HEART of a CHILD

By *Paul D. White*

THE HEART of a child is a marvelous thing. Though delicately constructed it is capable of an enormous amount of work which is essential to life. At birth it weighs less than an ounce but even as it toils on, day and night, it grows steadily larger to keep pace with the growth of the rest of the body, and then when it has reached the adult size of half a pound it keeps on working for another fifty or sixty years until finally fatigue or some shock ends its task. Time and again the heart may almost stop beating under strain or illness, but it has a tremendous reserve and carries on past the crisis to settle down for many more years.

A tiny impulse, represented by a thousandth of a volt of electricity, is generated in a bit of tissue in the heart called the pacemaker and spreads down through the muscle to produce the heart beat. One impulse succeeds another, 100 times a minute or more in a small child and less rapidly with increasing years. If one assumes an average pulse rate of 90 beats per minute for childhood extending through the first sixteen years of life, calculation gives one the amazing total of 129,600 heart beats in a day, 47 million beats in a year and 757 million beats before adult life is reached; and if one adds to that sum 54 more years as a grown-up at an average pulse rate of 72 beats per minute, one finds that this delicate muscular pump called the heart contracts nearly 3 billion times!

Conservatively one may estimate that the average output of blood by the heart per beat in childhood is 1 ounce and in adult life 2 ounces. The heart then pumps more than 1,000 gallons of blood a day, 6 million gallons throughout childhood and another 33 million gallons after that, which makes a total of nearly 40 million gallons during three score and ten years of life.

The pressure exerted by the heart as it beats varies with age somewhat, but even in earliest infancy it is considerable. Soon after birth each heart beat is sufficiently powerful to force a column of blood more than 2 feet into the air; in later childhood this height increases to 4 feet and normally in adult life to 5½ feet.

Not only is the heart capable of all this steady and amazing amount of work, but it is so delicately adjusted and balanced that it responds rapidly through its nerves to the varying needs of the body. It speeds up like a flash or increases its pressure or its output, and when there is great demand it can pump much more than double its usual output.

Think of the wear and tear on the delicate tissue of the heart from all this work. Nevertheless, through its well nigh perfect adaptation to its task and the constant replacement of old cells by new in muscle and elsewhere through the heart, years of toil, day and night, usually leave hardly a trace. Eventually, in old age, or in earlier life if inheritance is poor or if disease invades the body, the tissue does wear out.

What heart troubles affect children? First it is necessary to distinguish between the functional and the organic types. Functional heart trouble consists of unimportant little murmurs and of disorders such as skipping of the pulse owing to early beats, rapid beating, slow beating, shortness of breath and pains in the region of the heart caused by nervousness, fatigue or lack of proper physical condition. Sometimes the term nervous heart is applied to a combination of several of these symptoms, but this is more common in early adult life than in childhood; it was frequent among the young soldiers in the Great War.

Organic heart disease in general is of many different kinds, but in children fortunately only a few kinds exist. In its various manifestations the condition is present in slightly less than 1 per cent of the school children of Boston, which means that there are approximately 1,400 children in Boston with organic heart disease. This is a large number and a challenge to doctors and to the community at large.

The most important type of heart disease in children, because it is by far the most common and crippling kind, is rheumatic heart disease which follows rheumatic fever, St. Vitus' dance and sometimes tonsillitis or other less definite rheumatic infections. It attacks children between the ages of 5 and 15 years particularly; although it has many effects, one of which in severe cases consists of damage to the heart muscle with dilatation, its chief result is crippling of the delicate valves with leaking (re-

gurgitation) or obstruction (stenosis) and consequent interference with the pumping action of the heart, undue strain on the muscle, and eventual heart failure ending life often before old age is reached. The "rheumatic heart" makes up fully 90 per cent of the heart disease of children and from one third to one half of all the heart disease of all ages in New England. Thus it is obviously the chief point of attack in the campaign against heart disease in childhood.

The problem of rheumatic heart disease is a difficult one to solve, but the medical profession is working away at it in many parts of the world; gradually doctors are learning new truths about it and more about old truths. It evidently results from the action of certain bacteria called streptococci; it is liable to follow tonsillitis or other infections of the respiratory tract in susceptible individuals who should be especially protected against such infections; it tends to run in families, partly as the result of contagion and partly because of family susceptibility; it is more common where there are poverty, malnutrition and overcrowding; it is common in severe climates with cold and changeable weather, and it is rare in the tropics. Such clues are already known, and more are coming. Some day man will be able to control this disease or at least to reduce its incidence, as he has done already with tuberculosis and typhoid. Man is on the threshold of great days, I believe, in the war against heart disease.

The causes of the remaining 10 per cent of organic heart disease in childhood are congenital defects (malformations at birth) which may or may not be important; diphtheria, which may kill quickly by its terribly toxic effect on the heart muscle unless it is quickly recognized and properly treated; scarlet fever, which only rarely results in valvular heart disease, and malignant or subacute bacterial endocarditis, which is an infrequent but serious complication of rheumatic or congenital heart disease.

To help the practicing doctors carry on the fight to relieve those already ill and to prevent others from becoming ill with heart disease, a group of associate workers whose existence has become vital in this situation has developed in recent years. These are the full time investigators, the public health officials, the nurses, the school teachers and the social workers. They must be supported so that they may in turn support doctors with their help.

What is the use of all this study and work if one simply spreads the fear of heart disease and if the children whose hearts are affected grow up to be hopeless and helpless under sheltering care? It would be better if they would not survive if that is all that can be done for them. Even education consisting in training the mind alone in school curriculums, helpful and important as it is, will not suffice. Far more must be done. Things that are often neglected, especially in so-called modern times, must be given careful attention. One must revive, nourish and protect the spiritual heart of the child. There is such a heart, though I am afraid it is often stifled and unrecognizable. The old tripod of body, mind and soul exists, or at least it should, and the most important of these is the soul. From time immemorial there have been great leaders and heroes and figures in history with wonderful souls in spite of crippled bodies or untrained minds, and every one knows of individuals living today with magnificent bodies and highly educated minds whose lives are a disgrace or at least only a burden to the world.

Especially is there a danger that the mind and the spirit will be depressed when the body is diseased. Any one who takes care of children with heart disease knows how easily they may be discouraged and lose heart and all interest in the joy of living, even while their sick physical hearts are getting better. The spiritual heart of the child is far more delicate than the physical heart; it needs far more careful handling, but when it is properly cared for, it is capable of amazing results, not only in the form of the development of happiness and usefulness in the child himself but also in the radiation of courage and true ideals of life to the family about him, to his doctors, nurses, teachers and the world at large.

The returns from the care one expends to develop the spiritual heart of the child are astonishingly worth while and make one wonder often at the stupid neglect of this side of childhood that has so permeated society in recent years. It has become the fashion to neglect the church, but in its place what is there which can serve to promote the spiritual life and idealism in man? Certainly nothing adequate. "Man does not live by bread alone." He must have religion of some sort or he will fail

miserably in life. The religion may be that of the church, which is essential for most of mankind, or it may be that of service outside the church, in science or art, or it may be a combination of these services, but the substitutes of today will not suffice. The movie, the radio, the magazines, the card table, the club, the golf links, the stock exchange, the business office, the corner drug store, the automobile—these things are of little use in building up the truly happy life. The whirl of today from one of these things to another is stultifying, an admission that man knows nothing better. There are no inner resources whereby the average person may be content when not being entertained—which is a shocking state of affairs. A great lack in American life is true leisure, a time for reflection and contemplation, which is as essential to health as are the other three elements—work, play and rest.

Now how does this apply to the care of the child with heart disease or as a matter of fact to the proper bringing up of the child whose heart is not impaired? The secret lies in the home, the bulwark of the present and of the future. The function and happiness of the home must not be delegated to doctors, teachers and social workers. There is a real danger of such transfer, and one must fight it by striving to build up the home again, its morale and its vital place in bringing up the child to be a happy member of society with a fine spiritual heart as well as with a healthy physical heart and a well trained mind. The doctors must take care of these children at home as much as possible. They must not be segregated in hospitals with more and more beds. Of course in study and treatment, hospitals are essential, but one must not overdo the idea. Also it is necessary to try to maintain in the hospital the spirit of a happy home.

For some years now there has been quietly but effectively at work in Boston a small group of women called the Committee for the Home Care of Children with Heart Disease. This committee acts to protect and nurture the spiritual heart of the child as much as it does the physical heart. It has done excellent pioneer work in elevating the atmosphere in the homes in which there are sick children, in developing proper resources for their care where such resources do not already exist, in seeing that medical attention is available by family doctors or by other doctors if the family has no family doctor, and in helping to surround the sick child with cheer and happy distractions, to cultivate his mind and to build up his morale and spirit. A single example of the worthwhile work of this committee has been the establishment of the inspiring In-Bed Club for children with heart disease; this club has already many members and graduates.

The home in which a sick child or for that matter a healthy child lives must strive unselfishly for the welfare of that child, and thereby it will lay up for itself blessings on earth, by elevating the level of society and civilization. With physical care, proper discipline, a cheerful religion of some sort and good example the child with heart disease can grow up to be a happy useful member of the community. One of the greatest weaknesses in the home in which such a child lives has often been the utter lack of discipline. The child is pampered and spoiled, and his whole life perhaps is ruined. Heart disease must not be allowed to break down discipline; the old adage "Spare the rod and spoil the child" has much force here. By discipline, encouragement and good cheer the child with heart disease may even profit by his handicap, for it is usually the person who has to overcome obstacles who does the best things in life, whether such things are in the realm of art or literature, science or medicine, government or business.

If life is too easy and the path is strewn with roses, the child and the grown-up, too, generally do not amount to much but are liable to live selfish, lazy existences. The spur of the handicap of heart disease may be enough to make a genius of a man, for after all a genius is usually only a person who is willing to work hard and persistently at a thing and not float aimlessly from one thing to another. Every one should learn to discipline himself, whether or not he has heart trouble, in order to make his life happy and useful. The best way to establish such a habit is to begin in youth. There should be no place like home to nurture both body and soul. If homes are without souls, it is high time to grow them; for "What is a man profited, if he shall gain the whole world, and lose his own soul?"

THE PIONEER FAMILY DOCTOR

A poem inspired by Dr. G. Gill Richards' article, "The Family Doctor," in the Journal of the American Medical Association, June 11, 1932

By FRANK FISCHER

Well on in years, with dignity he walked.
Though rich in learning, still he always talked
With unassuming tone to those about him—
Those fellow pioneers who felt, without him
They scarce could meet the ills that might befall them
In that new land where fate had seemed to call them.

His greater knowledge lent him no vainglory.
With kindly sympathy he heard the story
Of those who sought his aid. He gave his best
To souls as well as bodies. Truly blest
Was that community, so widely scattered,
Who shared his counsel, feeling naught else mattered.

In bearing grave, and yet in manner cheerful,
Inspiring to the timid and the fearful!
His eyes were keen, yet shone with light benignant,
Lifting the gloom that had seemed so malignant
Before he came along to exercise
The magic of the twinkle in those eyes.

His cheeriness and laughter were contagious,
Imparting to the sick new hope courageous,
Though sometimes brusque and far from sentimental
In choice of words; his hands were always gentle,
Doing the task that to them was assigned,
Giving swift pain, but only to be kind.

And though his dress, perhaps, was coarse and rough,
Still, after all, 'twas neat and clean enough.
His big gold watch and eke its massive chain,
Almost a badge of office, oft would gain
The quieting wonder of the ailing child
That sat upon his knee, content, and smiled.

But 'twas when all stood round with bated breath
In that great crisis, grave, of life or death
That the old doctor was quite at his best.
Then with new energy was he possessed.
Then, general and army all in one,
Off came his coat, his separate cuffs undone;

His sleeves rolled up, he took complete command,
Not only of the patient, but with grand
And all-inclusive gesture, quite akin
To that which on the battlefield would win,
Dominated the household in its terror
With a sure touch that never was in error.

There were no nurses there to heed his orders.
With no regard for critics or applauders,
He settled then just what was to be done
And did it, if it took till set of sun;
Or if, at dawn, a new sun did arise,
He worked away, prepared for fresh surprise.

His day's work is long as pain and suffering last.
His charity knew no bounds. His lot was cast
With those in need of ministering hand.
He loved the children. He could understand
And feel for those whose sorrow surely nears,
And oft his eyes were bright with unshed tears.

Here was a man whose love of man was real.
Here was a man who practiced his ideal
Of service, though conditions oft were trying,
On his God-given strength and skill relying,
Whose work his fellow pioneers could bless,
A homely hero—nothing more nor less.

ATHLETICS FOR THE ATYPICAL

By
R. K. Atkinson

WHEN a person is definitely deficient mentally, he is called feebleminded. There is no difficulty in recognizing this condition. Tests were devised some thirty-five years ago by means of which those who are slow in their mental processes, that is, subnormal, can be recognized. The feebleminded person is atypical, but society has little problem with him because today he is quite generally recognized in the school, his condition is diagnosed with little trouble, and he is placed in special classes.

Atypical Individuals Form Three Classes

There is another group of the atypical made up of those who are emotionally unstable. Theirs is not a lack of ability to deal with facts and situations. Their emotional reactions are the basis for their variations from the normal or average individual.

It is about this sort of atypical individual that I want particularly to speak. Although physical educators are not primarily concerned with well organized testing technics that will differentiate carefully and scientifically between persons who react normally in their emotional life and those who do not so react, they do have a clear and definite basis for the diagnosis and discovery of atypical persons when they begin putting them into activities. Here atypical individuals can readily be discovered in three distinct classes: First, there are those who drag their feet, who are lazy, who do not get into activities. Second, there are those who are not particularly lazy and who have a great deal of ability but do not cooperate with other people. Third, there are those who are boastful, showing something of the bully, the Johnny-on-the-spot who is always making trouble because he is so capable, in his own conception of his rôle, that he wants to run things all the time. Such a person is a real problem not because he is dragging back but because he is trying to run away with the show. Instructors see these three types of atypical cases constantly in their work. In the first class, composed of those who are lazy, educators have discovered that in almost every case there is some physical condition involved that is abnormal or subnormal and is often remediable.

I am a firm believer in the close tie-up that should obtain between health and physical education. No one has better opportunities for discovering physical defects than the physical educator if his eyes are open and he is alert to the real responsibilities and opportunities of his profession.

Health is positive, vital, dynamic. On this basis the physical educator has a key to health and physical vitality such as no well planned and hard and fast set of tests has ever yet been able fully and accurately to measure.

Nearly always the lazy person, the one who drags his feet, is suffering from some sort of a physical defect. Defects which are related to bad heart conditions are the most readily detected, but those which are due to focal infection, to lowered vitality, are sometimes difficult to detect quickly. When careful and well followed up physical examinations are put in as a part of the physical education program, the number of remediable defects discovered is amazing.

Not only is there an opportunity in physical education for the discovery of these remediable defects, but it is a means of motivating physical health.

I went into a boys' club in Washington, D. C., and saw a poster, among many other excellent posters, issued by a national child welfare organization, with the caption, "Whose teeth will you be using when you are forty-five years old?"

The Real Boy's Interests Are in the Present

Imagine trying to get boys interested in what is going to happen to them thirty or thirty-five years hence! One can hardly get a boy interested in what is going to happen an hour hence, this afternoon or tomorrow morning. He is interested so much in the thing that is immediately in front of him that one cannot motivate a health program by looking ahead thirty or thirty-five years.

Compare that club with another boys' club with which I am familiar. A boy comes down to the gymnasium floor; there is a notation against his record there, and he is called up.

"Look here, Jimmie," says the leader, "I see that you didn't show up at that dental clinic yesterday afternoon."

"Oh," says Jimmie, with his eyes wide open, "I forgot all about it."

Boys forget dental appointments just as adults do. Every one has that wonderful psychologic mechanism which enables him to forget abso-

lutely anything that is distasteful. So Jimmy really had forgotten all about it until he was reminded.

"All right, I have a note here that you have an appointment for 4 o'clock tomorrow. See that you keep it."

"Sure I will."

About the second time Jimmy forgets, he is told, "Jimmy, no more swimming until you get those teeth looked after. You really have a bad condition there."

Then Jimmy goes to the dentist, not because he is interested in whose teeth he will be wearing at some distant time but because he is interested in going into that swimming pool this afternoon.

The first thing that enters into this whole picture then of the atypical child is good health on the part of that child. When the instructor begins to develop in his pupils that real, vital, vigorous health, he will find that a great many of the boys he thought were just lazy really did not have that small margin of surplus energy to put in the program that makes the difference between active participation and a lazy, noninterested, nonparticipating attitude.

Laggards Are Generally Below Par Physically

I am not just talking theory here. It has been discovered over and over again that those who are lagging and dragging their feet and who seem to be uninterested are generally below par physically, and to get them into the activities, one must be equally alert as to their physical condition.

Whenever a boy loses breath easily, whenever he begins to be a little bit uninterested, one ought at once to look for health hazards.

Second, consider the child who is interested sporadically. For instance, in the beginning of a game of indoor baseball a boy is put on third base; he is all interest at the beginning and through a few innings, but before long when a ball is headed his way he just does not seem to see the ball at all; he has forgotten all about the game.

The third type, the one who is boastful, always pushing himself ahead, sometimes making himself obnoxious, is quite familiar too. He takes these means of adjusting himself to any situation which he fears he is not quite capable of handling and which therefore will possibly bring him something less than the full satisfaction desired.

These situations present adjustment problems. It is the emotional attitude that determines whether or not one can fit in with the others in the group or whether one is going either to evade or else to try to overcompensate and so put oneself into a boastful, cocksure attitude that will make one unpopular.

The Emotions—a Practically Uncharted Sea

Little is known about the emotions. The education of people to deal with their emotional life in a correct manner is a difficult and trying task. I think that much real progress in the years to come is going to be made in this field. But for the present, at least, the approach must be practical rather than theoretical. One can to a large extent control an external voluntary muscle, but little is known about the internal, involuntary musculature. To a certain extent, one can, in terms of activity, achieve something of the control of the internal musculature by adequate and effective control of the outward or external musculature. To understand the real significance of this, I would recommend a book by Kempf called "The Autonomic Functions and Personality." On Kempf's theory much modern mental hygiene is based.

How is this tie-up between emotion and activity to be established? Patrick's book called "The Psychology of Relaxation" answers this question thoroughly.

Man must have some means of relaxing his emotional tension. Whistling, singing and doing all sorts of foolish things will accomplish this. It is really a fact that in so far as one leads a cautiously organized life with due regard to one's neighbors and to convention, by just so much is one apt to set up these emotional tensions. The answer is that every one should have adequate outlets that have been established for the relaxations of these emotional tensions that are a part of daily life.

There may be a boy in the gymnasium class who for some reason or other is not constantly efficient. He can step up to a situation sometimes and master it, and sometimes he cannot, and he knows he cannot, because he has gone into such situations at one time or other and he has failed. Perhaps somebody told him when he was young that he could not succeed, or perhaps he has been coddled, or he has had too much love and too much sympathetic understanding on the part of adults, so that he has learned that he is not quite the master of any situation that he faces.

Nash has a most interesting theory. It deals with the fear drive that is back of us all the time, making us do things. Fear may be helpful as long as one is the master of it, but when it gets into one's soul and one begins to realize that in various and sundry situations one cannot quite be the master, then it begins to have a definitely harmful effect, and two things happen invariably. One may withdraw from the situation into a world of dreams and fantasy as did the boy who went to sleep on third base. If one could suddenly get a photographic flash of what was in that boy's mind one would find perhaps that if he was thinking of baseball at all he was not in the field playing this game at all; for the moment perhaps he was Tony Lazerri out there on third base, or he may have gone off into a world of dreams and fantasy far from the realities of this particular situation.

Activity—the Antidote for Emotional Tension

Whenever one picks out that boy who is beginning to be a day-dreamer, who is beginning to drop away from reality, one is doing a splendid high grade type of mental hygiene, for after all the great task today of mental hygiene lies in finding for people those means by which they can cure themselves before they get over the line too far. There is little in the way of medicine for any mental disease. The most eminent psychiatrists today say that the answer to the whole mental hygiene program is activity which establishes the plan that Kempf speaks of for getting release of the emotional tensions under which people live. Thus that boy, who may seem to be utterly relaxed and out of the picture as far as activities are concerned, is in that situation because of the emotional tensions that he has not been able to handle in the situation in which he has lived.

The fear that he cannot succeed, that he cannot do it is ever present. One must find something that he can do, give him some place in the team that he can fill. The instructor must decide what his competence is and then play up that competence. If there is something that the boy can do, that is what he must be given.

A girl whom I met at the Bedford Reformatory was sentenced there as a wayward minor. She was 17 years of age and was played up in the newspapers as a wild woman who had preyed on society. Actually, she had the intelligence of a child of 10. During the recreational activities, she confided in me one day, "I am the worst girl in this institution. I have made more trouble than any five girls in here."

"What do you do to make trouble?" I asked her.

"Why I kick out the windows and just raise hell generally."

I began to study the case and discovered that the girl could do nothing in a way that gave her satisfaction. The institution had some athletics in the program, but they were not doing her any good. She could not coordinate well enough even to do a simple folk dance that a 6 or 7 year old child in the second or third grade can do. She was inefficient in work as well as in play. She could not sing, and she could not take part in the dramatics. There was not a thing in the program that she could do well, so she had to find some form of expression that would yield satisfaction, and she found it and was proud of the notice she got by being the worst girl in the institution.

I realized that we had to find something right away in which she could excel. I discovered that she was interested in music and had tried time and time again to sing in the choruses. However, she was just a discordant element.

The music books were in terrible shape. There was much good music, but it was all mixed up. There was no order about it at all.

I asked her to help me organize it into some shape. We went into the office and got some manilla folders, and she catalogued and organized that music. She developed into a regular tyrant with that music, even supervising with great pride the girls who distributed the song books. Later she took charge of the ushers, and when the crowd came into chapel she stood right at the front like a queen and directed so that everything moved with perfect precision.

The Fear of Futility

From that time on, windows and doors were not kicked out. She had found something else in which to take pride. I was speaking to the matron in her cottage one day, and she remarked, "I don't understand it at all. The most amazing thing has happened to Mary. Why, she has been perfectly angelic. I cannot understand what has happened to her." I tried to explain, but I do not think I succeeded well, that some way had been found in which that girl could get away from the fear that she never could achieve anything worth while, and that she had found a place to do what she could do.

Watch the boy who appears to be away off in the clouds most of the time, for if he is not watched he may ultimately become a mental hygiene problem. Find out what he can do, and make sure that he fits into the picture where he really belongs.

The seriousness of the mental hygiene problem is illustrated in Menninger's "The Human

Mind." Menninger is a trained psychiatrist. He wrote his book in a popular vein in order, as he said, that he might lay before the American people what is really happening in cases of mental breakdown. Hardly a day passes that one does not read of sad and terrible cases in the newspapers in America. These are caused, I believe, by not taking this business of mental hygiene seriously enough to get any answer to the problem.

One certain answer will be found in dealing with these atypical children before they have established these habits so firmly that it is impossible to remove them, before they have passed over entirely into the world of dreams and fantasy.

I realize that in the midst of a big physical education program, with 60, 70 or 100 children on the floor, it is difficult to consider the individual rather than the group. However, I believe the increasing emphasis in education is going to be on the individual. If the physical education instructor will make it his job to let the 70, 80 or 100 have a fairly good free time and spend his time trying to pull in the one who is not fitting into the picture, or who is backward, and bring him into the center of things by giving him something that he can do well, he will be doing a real job.

The other type is the boastful, self assertive, overcompensated type, the fellow who believes that he cannot fit into the picture; but instead of admitting it and slipping back, he begins pushing himself forward. It is just his way of whistling while he passes life's graveyards. He is bolstering up his courage by making a noise.

Inferiority Seeks Compensation in Boastfulness

If this sort of a youngster is just keeping up his courage by being boastful, how can one break him of this and still keep him interested? Generally, if one watches such a person in his play, one sees that he is a fourflusher, that he cannot do things quite well. To keep up his courage he talks about it and tries to compensate by being loudmouthed and cocksure.

This easy diagnosis is not always certain. There is one exception always possible. A few years ago I came in contact with one of these cocksure individuals who, instead of bluffing, really had the stuff in him. I will never forget that experience. I was in a camp out in the Middle West. One of the campers, Harry, was of the boastful type. I said to myself when I observed this on the first day, "Before many days pass, we will have to make you subside." That feeling was shared by the other boys, and before twenty-four hours were up he was marked among the group. He was on the spot on every occasion and had a great deal to say on everything, so I tried to set myself the task of seeing what could be done about it. It was only a two weeks' camp, yet I felt there was an opportunity to do something because he had apparent ability and many likable qualities; I hated to see him making himself so unpopular with the sixty or seventy young 18 or 19 year old boys who were there.

On the second day we had a little tryout for a field day. He stood off to one side and had a good deal to say. Finally, he criticized a boy who had started in the 100 yard race.

I said to him, "You run it then the way it should be."

"All right." He took off his shoes and ran away from everybody.

The Fine Line Between Genius and the Atypical

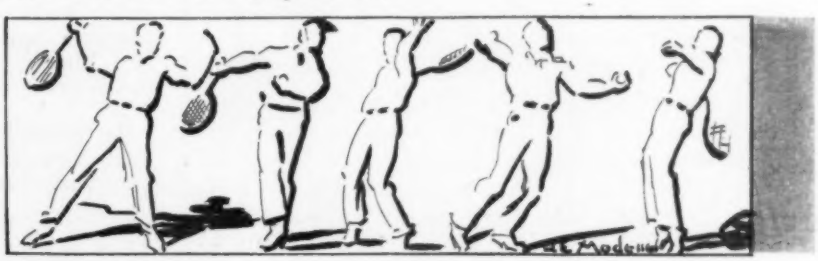
There was a little daily camp paper. Two fellows got the paper out each day, and a few days later Harry's bunk mate, who was editor-in-chief, brought the paper in and read it. It had a great deal of good material in it; naturally it was amateurish, but the boys all applauded him and said it was fine. In the midst of this, Harry got up and said, "I think that is perfectly rotten." Everybody was somewhat crestfallen. Quite unabashed, he continued, "Why not have a real paper here?"

His bunk mate said, "All right, I will nominate you as editor to get it out."

"All right, I accept," and without any assistance he got up the best paper of the entire two weeks.

We could not do much with this fellow. Everything he touched was the same. He was a star. That is genius. Once in a while one will find such a boy in this class, and when one does one must steer him into normal channels; one cannot force him, but one may be able to do a little steering. After all, genius and the atypical lie so close together that often one cannot distinguish which is which; but nearly always, I should say nine times out of ten, or ninety-nine times out of a hundred, when one runs into a boastful, cocksure person, one is not dealing with a genius but with one who is too "dead sure" of himself.

The treatment is just about the same as one would give for the boy who is falling out of the picture: give him things that are really a part of the team, that really contribute something to it, and you will find that you have an answer to the question.



I recall the case of a boy who was boastful and was constantly finding fault in basketball. I happened to be refereeing, and suddenly I said, "You take this whistle and referee this game."

That was the first time I had ever seen him when he had anything of a look of uncertainty about him.

"I don't know whether I can do it or not." So I had to encourage him a little, and said, "I am tired; go on and take the whistle and run this game."

He made one of the best referees we had ever had. He could not play basketball himself, but he knew all the rules and exactly how to criticize everybody else, so he made a good referee and never nagged any more. He was cured and was absolutely free in the future from that cocksure attitude, not because somebody had shown him up on something which he could not do but because he had found something he could do. The constructive approach is necessary with that kind of atypical person. He is overcompensating for his inferiority and is boastful and troublesome because of that. Be sure to find something for him that he can do, and do not break his spirit further by simply accentuating his difficulties. The tendency is always to show this boy up. However, that is not the right treatment. One is liable to push him over into the other class and create a little more of a mental hygiene problem than in the first instance.

The results that are being achieved in the field of physical development are not just a matter of building muscle, of building health, but of restoring people's confidence in themselves, of giving them that sure touch that will send them forth in life not atypical misfits, but persons capable of achieving things that are worth while, because they have been taught that they can do things. Out of the doing comes the learning.

[EDITOR'S NOTE.—*"Athletics for the Atypical" is printed by permission of the Wingate Memorial Foundation. It is included in the book, "Aims and Methods in School Athletics," the published record of the Wingate Athletic Lectures of 1931-1932, which contains a complete record of the lectures and demonstrations given before the health education teachers and physical directors of New York City.*]

Leave Magic to the Mad March Hares—

The March Hare May Pull Teapots from Hats, but Thoughtful Readers Will Find the Greater Miracles of Science and Common Sense in the March Issue of Hygeia

In part 2 of his series, "Quelling the Quacks," *Dr. Solon R. Barber* continues the good work of making *Hygeia* readers more quack-conscious.

Do you possess the attributes of the healthy man? Read *Walter B. Pitkin's* list in "The Dividends of Health" and see whether or not your score would be close to 100 per cent.

Do you eat to live or live to eat? The "whys and wherefores" of the two forms of obesity, real and imaginary, are discussed by *Dr. Henry J. Gerstenberger.*

"Case number 10,000. . . . No, I am not the warden of Sing Sing," writes *Ann Scott* in a dramatically gripping paper, "I am the office secretary of the Oxford Visiting Nurse Association. . . . A dull job? Never! A service our town could get along without? Well, what do *you* think?"

Dr. P. M. Ashburn, librarian of the Army Medical Library, begins a serial, "Progress in Preventive Medicine," in which he traces the development of education in the prevention of disease.

In "Protecting Tony," *Paul H. Stevens* discloses the scientific miracle that guarded little Tony Petrucci from imminent danger.

These are only a few of the many and varied articles which the March *Hygeia* will bring.

QUELLING THE QUACKS

By Solon R. Barber

PART I

QUACKERY in the treatment of disease has flourished since the first dark days when hairy man with his underslung jaw stole out of his caves to club food animals to death, to gather wild berries and roots and to practice the incantations that were supposed to cure the sick or to heal the wounds of warriors in battle. Knowledge of the prevention and cure of disease has increased mightily. The days of incantation, of voodoos, of witch charms and of cauldrons boiling at midnight in dark forests have passed; but the quack, cashing in on the credulity of the sufferer, is still with us. The ill are notoriously credulous. The very nature of many diseases breaks down the patient's resistance and renders him, in many instances, subject to hallucinations.

Modern Methods Among the Ancients

It would be unfair to say that all the medical men in the earlier days of the race were quacks and that the methods they used were invariably worthless. The ancients, without question, knew much about the treatment and cure of disease. Their methods were crude and often torturous, but they sometimes succeeded.

The ancient Egyptians were probably the first race to claim an organized medical science. It is known that they created pharmacy, a science which has reached a lofty height of efficiency and merit. The Egyptians, in addition to using suggestion, employed liniments, tonic potions, plasters, laxatives and enemas as well as magic. It is probable, however, that the rather hard-shelled pyramid builders did not rely so much on magic as a good many earlier peoples had done. According to a writer on medical sciences, the Egyptians "practiced an abortive sort of mental therapy, antedating but resembling the gospel according to Coué, the profound revelations of Christian science and modern spiritual healing." The sentence has a highly modern ring. The quack, 1933 model, also employs suggestion and spiritual healing, and his advertisements are full of the age-old statements that the ill may become better if they will to be better.

The Greeks, in a later day, also utilized suggestion and sometimes treated their sick with prayers and charms. While they made offerings to the gods, they were apparently too wise to trust such virulent forms of bodily disorders as

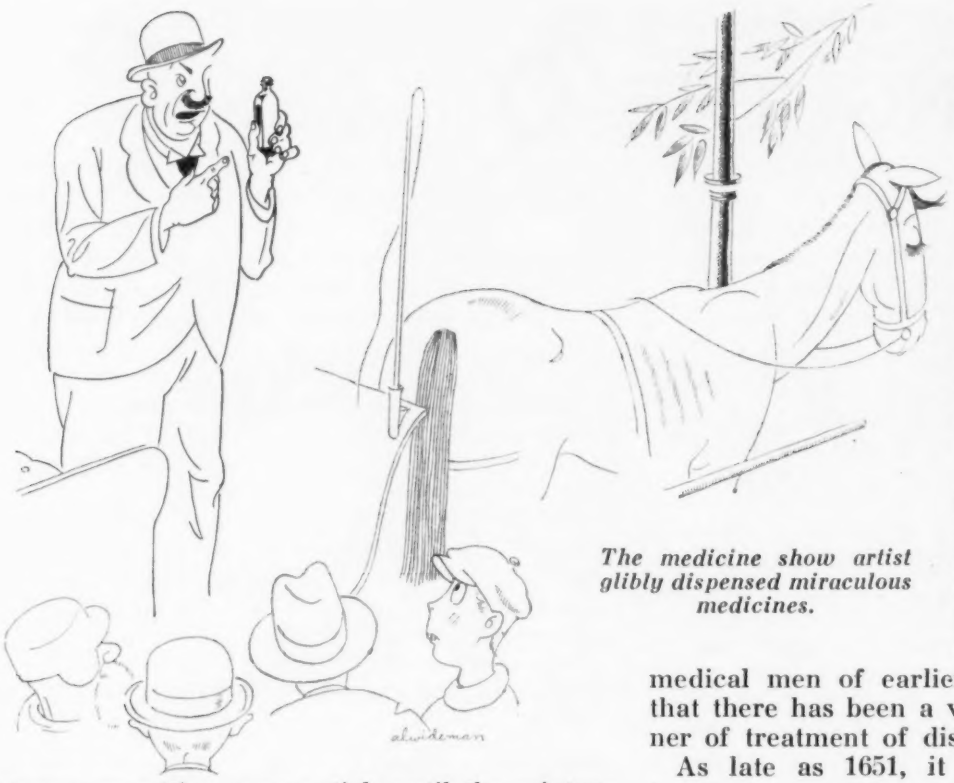
"An abortive sort of mental therapy" was practiced by the ancient Egyptians.

ulcers and wounds to the ministrations of their deities. They found crude methods of dressing wounds.

The medicine man who worked among our barbarous ancestors gave place as early as 1552 B.C. to "specialists" (the word is not used in its modern sense) who devoted considerable time to scientific investigation of the various herbs, juices, chemicals and other substances that had been found to have some alleviating, if not curative, effect on disease. In Hermes Trismegistus' Book on Medicine, published in 1552 B. C., and later found in Egypt, is given a treatment for constipation consisting of a concoction composed of milk, pulverized NeKaut and honey, which was to be cooked, and eaten for four days. Modern physicians frequently make use of the more efficient drug, cascara sagrada, for the treatment of this disorder.

Roman Remedies

For diarrhea, I quote the remedy of Asclepiades (60 B. C.), although I have never tried it myself. This Greek physician, a practitioner in Rome, recommended myrtleberry wine, sumach and honey for this trouble. The sumach was to be boiled with the wine and



The medicine show artist glibly dispensed miraculous medicines.

stirred up with a senna stick until the mixture was thick; the sumach was then to be strained out, the honey poured in and the concoction boiled until it "obtaineth consistency." The dose was one spoonful. Today, camphor is frequently used to check serious diarrhea, and this drug is also valuable as a carminative, an antispasmodic circulatory stimulant and an antipruritic.

Proscription—A Sure Cause of Insomnia

There are many reasons why the ancient Romans suffered from insomnia, including the posting of the lists of those to be assassinated. Celsus (50 A. D.), the author of a comprehensive treatise, "De Medicina," suggested an anodyne. I quote Celsus: "They call these anodynes which relieve pain by sleep; to use such, unless extreme necessity urges, is unfit; for they are made out of medicines both violent and improper for the stomach. Yet there is one . . . powerful for sleep which has mandrake, seed of smallage and seed of henbane, which are bruised in wine. It is enough to swallow an amount the size of the vetch." It is probable that he meant the bean of the vetch, a crop well known to early Romans. Henbane is still useful as an anodyne and relieves delirium tremens, mania, nervous cough and hysteria.

The federal Food and Drug Administration recently issued a statement to the effect that careless and indiscriminate use of headache remedies may bring serious results. Apparently, preparations designed to relieve headache were well known in an earlier day, since Paul of Aegina (625-690 A. D.), who was a compiler of the Byzantine period, lists one in his "Epitome." Said Paul: "Trochisks for headache connected with a warm intemperament [fever?]: saffron, copperas, alum, myrrh, oil of unripe olives, chalcitis, gum, austere wine." The medicine was supposed to be used with an "oxycrate." Today caffeine is used in combination with coal-tar derivatives for the relief of headache.

I do not mention these remedies used by the ancients necessarily as examples of fake or worthless delicatessen. I have quoted from some of the well known medical men of earlier days merely to show that there has been a vast change in the manner of treatment of disease.

As late as 1651, it was common practice to treat a wound, received in battle or otherwise, by burning with a red-hot poker. It must be remembered that anesthesia was unknown in the seventeenth century, and the practice of cauterizing wounds proved frightful to the patient. In the "Anatomie Universalle," published in Paris in 1651, Ambroise Paré declared that gunshot wounds were not poisonous, contrary to popular belief, and therefore did not require the application of boiling oil or red-hot metal. Paré declared that wounds are best healed by "soothing applications." He also stated that hemorrhage after amputation should be arrested not by the terrible method of cautery but by a simple ligature.

We moderns—at least those of us who consider ourselves civilized and sophisticated, in the better sense—do not resort, as did the ancient Chinese, to toads' eyelids if we suffer from coryza or to earthworms rolled in honey if we are afflicted with gastritis; and doctors no longer prescribe centipedes when children become ill.

Medical Superstitions in Mexico

Fortunately we have, constantly available, specialized medical services and do not pretend to depend, as do many of the Indian tribes in Mexico, on treatments prescribed by the *curanderos*, or herb doctors. Stuart Chase reports in his excellent book "Mexico" that there is a disease greatly feared by some of the more isolated people of that country which is completely unknown to us. Says Chase: "If one falls ill of *el espanto*, the 'terror,' one trembles and grows weak and does not wish to eat. Anything frightening may cause it, as waking up

suddenly in the night and seeing a ghost. The patient must be bathed with laurel that the priest has blessed and with orange and shaddock peels which have been placed on the altars during Holy Week." Unlike the Mexican Indian, we do not attribute disease to the foul deeds of *los aires,* which are the evil spirits of the air and which, according to Chase, are reported by the Indians to be found in water tanks, in ravines, at public washing places and in the rain. "They are thought of as very little people. This concatenation of little people and water is most unfortunate. It makes washing extra hazardous. Remedies are various, including anointing with certain herbs and internal doses—such as tea made from powdered woodpeckers' heads. Amulets compounded of 'mucuna' seeds are also worn. The anointing with herbs should be done at the intersection of two streets. When completed, the bundle of leaves is flung away and the patient must rush into his house without looking back."

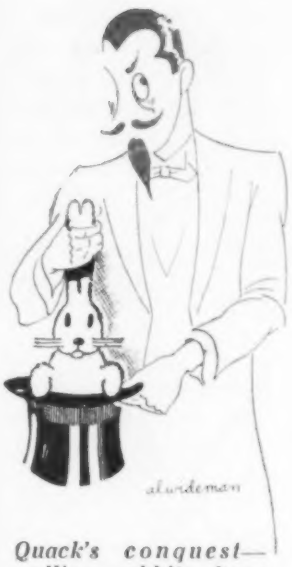
In the Days of the Medicine Show

Many would laugh at these illustrations of ludicrous therapeutics; but he who laughed longest and loudest might be the very one who would try to cure tuberculosis with a horse liniment composed largely of ammonia, turpentine, water (approximately 50 per cent) and egg. The quacks, although they have gone modern, are still with us; so are the fake remedies put out by fakers and charlatans. Away back in the days of the medicine show, when the bearded quacks rode into town in a buckboard, tied up at the town hitching post and, before selling them some miraculous preparation, proceeded to entertain the citizens with parlor tricks that never seemed to come off, there was a certain medicine show man who traveled with a product labeled "Indian Swampweed Bitters," or it may have been "Snake Oil" or perhaps "Wild Root Bitters." But no matter what it was called, the concoction was usually made of well water, brown sugar and a dash of vile tasting but medicinally useless herb extract. Of course, it was not sold as colored, flavored water. The folks bought it after the "Doctor" had delivered a long speech full of references to home and mother, to "Nature's great balm that brings health and peace to troubled mankind" and—to the political situation. The "Doctor" guaranteed his wares to cure almost anything from a tired feeling to rheumatism. With his pockets full of money, he then shouted "Giddap" to his horse and shook the dust of the town off his flashing buckboard wheels.

"A quack was making a speech ballyhooing his wares," says Solon R. Barber in the second article of his series, "Quelling the Quacks," which will appear in the March issue of HYGEIA. *"'I have sold 6,000 bottles of this marvelous remedy,' bellowed the quack, 'and not a single complaint have I received. I ask you—what does this prove?'"*

"'That dead men tell no tales,' shouted the Man in the Crowd."

One will not find many quacks entertaining people with magic tricks any more. They no longer ride into town and put their apprentice to work mixing up bitters in a tub back of the buggy, while the "Doctor" takes rabbits and snakes out of a hat up front. The quacks seldom sell their stuff by direct contact nowadays. They use the newspaper, billboards, druggist's window and other means, until they run afoul of the law.



Quack's conquest—pulling rabbits from hats and money from pockets.

In a later article in this series I propose to identify the quacks and to tell the reader how to recognize them. Fortunately, they have certain quite definite earmarks. For one thing, they are past masters in getting a man's attention through talking about his health. The really dyed-in-the-wool quack can make a strong man worry about his health, although he may be in perfectly sound condition. The quack can appeal to one's desire to be well, strong and full of vim, vigor and pep. He can make some persons so fearful that they go around biting their nails and talking to themselves. A sale usually is easy after that.

It is well to remember that the quack is in the business of selling quack preparations for the sole purpose of making money. He is not interested in effecting a cure.

This ancient principle of first scaring a man and then reassuring him is well known in the more dubious advertising technic. Almost invariably used in the advertising of fake drugs and medicines, it is simply the old buckboard ballyhoo broadcast to hundreds of thousands. Its appeal is not limited to a small circulation within the range of the bear-oil man's leather-lunged voice any more. And that is one of the main reasons why this method of selling is all the more dangerous. One can scarcely go through a day's reading these days without finding in some magazine or newspaper some of those mellifluous, golden worded, extravagant, exaggerated quack medicine ads. How about the men who pay to have them printed? How about the quacks? Who are they? What is their game? Is it legitimate?

Is It Rheumatism Or Arthritis?

By MAURICE F. LAUTMAN

"YOUR TROUBLE is rheumatism." The patient, heaving a sigh of relief as her physician made this pronouncement of her ailment, replied, "Thank heavens, Doctor. I was so afraid you were going to say it was arthritis." Rheumatism conjured up memories of the old maiden aunt, whose creaky joints carried her around for the last thirty years or so of her life, during which time she boasted proudly of her superiority over the United States Weather Bureau as a forecaster of changes in weather, but who, despite her infirmity and her complaining, lived out her expectancy in comparative good health and comfort. Arthritis, on the other hand, recalled the distressing picture of a distorted cripple, helpless, pain ridden, with swollen joints and shrunken muscles, an existence almost too horrible to contemplate.

As a matter of fact, rheumatism and arthritis are one and the same condition. The two terms refer to the same disease and are synonymous. An idea exists in the minds of most laymen that arthritis refers to a more disabling or more severe process than does rheumatism, but that idea is erroneous. The term arthritis is merely a more recently accepted, correct medical usage for the group of ailments which in former years were classed as rheumatic.

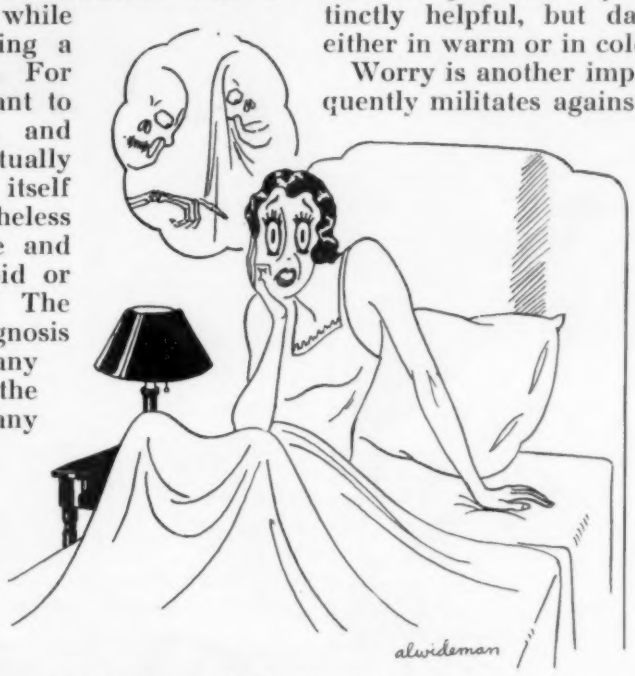
What is arthritis? It is impossible to answer this question in a word. The derivation of the term from the Greek would indicate that it means inflammation of a joint (*arthron,* joint; *itis,* in the nature of, or inflammation of). Actually, arthritis is a term used to designate a constitutional disturbance that manifests itself by inflammation of the various bony and soft tissues which go to make up a joint or which lie over or close to a joint. This inflammatory process, in the early stages, may be accompanied by pain on motion, swelling, tenderness on pressure, stiffness, and general disturbances such as varying degrees of fever, loss of weight, lassitude, and fugitive aches and pains. In the more advanced stages, the process may extend to many different joints, in which, if the disease remains unchecked, more or less permanent changes develop with varying degrees of impaired function and deformity.

One seems to hear arthritis discussed among laymen much more frequently in recent years than heretofore. While this is partly due to the healthy interest which people are exhibiting in the whys and wherefores of their physical well being, it is due also in a great measure to the fact that arthritis is on the increase. In Europe, particularly, this increase in the incidence of arthritis and in its economic significance has given rise to grave concern and has led to the organization in many of the European countries of arthritis commissions for the purpose of studying means of prevention and cure of this disabling malady. Likewise in this country, the increased prevalence of the disease is being investigated from many different angles. The statistical department of one life insurance company has estimated, as a result of several surveys, that arthritis exists in the ratio of between 300 and 350 cases to every 10,000 of population. These figures coincide well with the results obtained in a survey which is being made by the Massachusetts department of public health, which estimates that there are 146,000 cases in the state out of a population of about 4½ million and that the incapacity resulting therefrom causes a loss of $8,000,000 annually. No doubt, with our improved methods of investigation and the broader significance accorded to the term arthritis, many of these cases are brought to light which in previous years might have gone unnoticed, but there is no question but that there is an actual increase in the incidence of arthritis in this country.

No less concerned than their European colleagues, many of the outstanding medical men of this country have been bending their efforts to shed whatever light is possible on the subject. There has been formed an American committee for the study of rheumatism which, in addition to several independent scientific investigators, has contributed much new and useful information for the arthritic patient.

While there are many different types of arthritis, they are practically all caused by poison from a germ; that is, by focal infection. It is estimated that not more than 5 per cent of the afflictions are related, from a causative standpoint, to diet and other factors. The older theories of excess of red meat in the diet and uric acid as a cause of rheumatism are no longer countenanced; and such factors as dampness and exposure to cold, heredity and glandular disturbance, while extremely important as predisposing causes, are not really at the bottom of the trouble.

The main cause is usually a small collection of germs, which, while it may not give evidence of disease at its place of abode, generates and feeds into the system a poison which has the disagreeable property of inducing inflammatory changes about a joint or joints. The extent of the damage depends, in a large measure, on the state of health and physical resistance of the patient, and the symptoms depend on the character of the tissue attacked. Thus, if the poison attacks a muscle it produces myositis (inflammation of a voluntary muscle) or fibrositis (inflammation of the white fibrous tissue of the body), of which lumbago is an example; if it attacks a nerve it causes neuritis, such as sciatic neuritis (sciatica), while the same poison involving a joint will incite arthritis. For this reason, it is important to recognize that myositis and neuritis, while not actually arthritis in that a joint itself is not involved, nevertheless are rheumatic in nature and are classed as rheumatoid or prearthritic disorders. The same applies to the diagnosis of neuritis or myositis in any part of the body, in the absence, of course, of any other clearly discernible cause of the trouble. The correct interpretation of prearthritic and arthritic symptoms and the prompt discovery and extirpation of infective foci, followed by the institution of supportive measures, if necessary, will, in many cases, cure the trouble or at least prevent its progress. The earlier these measures are instituted, the greater is the probability of a cure and the less likelihood will there be of extension of the process and permanent deformity.



"Only rheumatism? Thank heavens, Doctor, I was so afraid you would say it was arthritis."

Naturally, the first step in establishing a cure is to locate, if possible, and eradicate the original focus of infection. In the order mentioned, the most common location of the focus will be found in the teeth, tonsils or generative organs (male and female), while it is quite commonly but less frequently found in the intestinal tract, nasal sinuses, gallbladder, bronchial tubes and inner ear.

Unfortunately, merely discovering and removing or curing the focus of infection is not always followed by relief of the arthritis. Too often the poison has become firmly implanted in some joint, and unless the patient is unusually vigorous or is endowed with an exceptional quality of physical resistance, measures must be instituted to remove the poison from the body as well as to aid the repair of the injured joints or parts. Hydrotherapy, physical therapy, gentle massage, heat, vaccines and various measures to increase the patient's resistance must be employed. A liberal diet is insisted on, particularly generous with reference to meat, fruit, eggs and milk. The only dietary restriction applies to sweets and starchy foods; these should be limited as strictly as possible. Beneficial results may be derived from exercise which is not forcible or tiring but which gives merely enough activity, increased from day to day, gradually to attain normal function. Climatic conditions have a pronounced bearing on these patients; dry, warm climates are distinctly helpful, but dampness and humidity, either in warm or in cold climates, are harmful.

Worry is another important factor which frequently militates against the patient's recovery, and pain and sleeplessness should be combated with proper measures. The use of medicines for the relief of symptoms is quite justifiable, although no medicine has established any value in producing a cure. In cases in which marked deformity and stiffness of a joint have developed, orthopedic appliances will frequently restore function to a previously handicapped member.

Much of the hopelessness which has surrounded these sufferers is, quite justifiably, disappearing, thanks to newer ideas on diagnosis and treatment.

The patient must, at the outset, dispel the pessimism with which he regards his condition. Courage and persistence in combating the disorder early in the disease will frequently effect a complete cure, whereas similar application later in the disease may be only partially effective. Even in instances in which the function of one or more joints has been apparently hopelessly impaired, it is important to institute every measure which offers any possibility of preventing the extension of the disease to unaffected joints and thus maintain a patient in a state of greatest economic efficiency. An eminent authority on arthritis states that he has "no hesitancy in making the assertion that if all the existing information on arthritis could be acquired and applied by practitioners who treat the disease, a striking advance would at once be achieved in the prevention and relief of suffering."

Lays for Loving Parents

(By One) BERTON BRALEY

I. Safety Last

Oh, he has flocks
Of boats and blocks
And carts and cars and cute utensils
To stir and train
His hand and brain—
But he prefers his father's pencils.

And he has toys
That make a noise,
Jinglers and squawkers, squeakers, whizzers
He "leaves 'em lay"
And sneaks away
With needles and with sewing scissors.

He'll coldly eye
The things we buy,
The toys of most expensive grades,
And play, alas,
With broken glass,
Knives, pins and safety-razor blades!

The High School Nurse

By
B. FAYE
MILLER

Demonstration of an oil bath on a baby, aged 3 weeks.

THE HIGH SCHOOL nurse is still enough of a novelty in the modern educational system to occasion much curiosity about her qualifications and speculation as to what she does all day at school. Each day in the nurse's department in a large high school is a full one for the nurse who deals with the health education of growing boys and girls between the ages of 14 and 18.

In the De Vilbiss High School, Toledo, Ohio, the school day is divided into six classroom periods of one hour each, with three minutes allowed for the changing of classes. The home nursing department is located on the first floor near the main entrance in a suite of rooms which includes a classroom, an office, a first aid and hospital room, and a lavatory and toilet room. The classroom is equipped with chairs and a blackboard, and it may be closed off from the other rooms. The hospital room contains a first aid cabinet and chair, a sterilizer, six comfortable cots, linen and blankets, a demonstration bed, lockers, cupboards, a hopper, a doll representing a 6 months old infant, a baby crib and a complete layette.

The following outline shows a cross-section of a day in the nurse's department:

First hour: Devoted to seeing students who have been absent on account of illness; to taking care of first aid, and to organizing the work for the day, which includes inspection of the restrooms, personal conferences with students and visits to classes for the purpose of observing the abilities, interests and reactions of the students.
If the school doctor is coming, preparations are made for examination of students.

Second hour: Class
Activities Hour, an interval of forty-five minutes during which the nurse acts as adviser for several clubs, such as first aid, Red Cross and literary clubs.

Third hour: Class

Fourth hour: Class
Lunch hour for the students. A busy time for personal conferences and first aid.

Fifth hour: Lunch for the nurse. The last part of the hour is used for personal conferences and first aid.

Sixth hour: Inspection of the girls' restrooms, personal conferences, first aid and talks to small groups of students.

The course of study on home nursing and hygiene is open to junior and senior girls as an elective, for which one unit of graduation credit is granted. The course does not encourage or prepare girls to enter nurses' training. Class time is divided into theoretical and practical work. There is no textbook, as most books for this purpose seem either too elementary or too technical for junior and senior high school students. An outline is followed which has developed gradually from the needs and interests of the girls. The outline is supplemented with material from The American Red Cross textbook on "Home Hygiene and Care of the Sick"; "Health Essentials" by Andress, Aldinger and Goldberger; "Anatomy" by Gray; Metropolitan Life Insurance Company; Cleanliness Institute; American Social Hygiene Association; government pamphlets on prenatal, infant and child care, and HYGEIA, the Health Magazine.

During the first semester the class studies first aid. The students are shown how to give

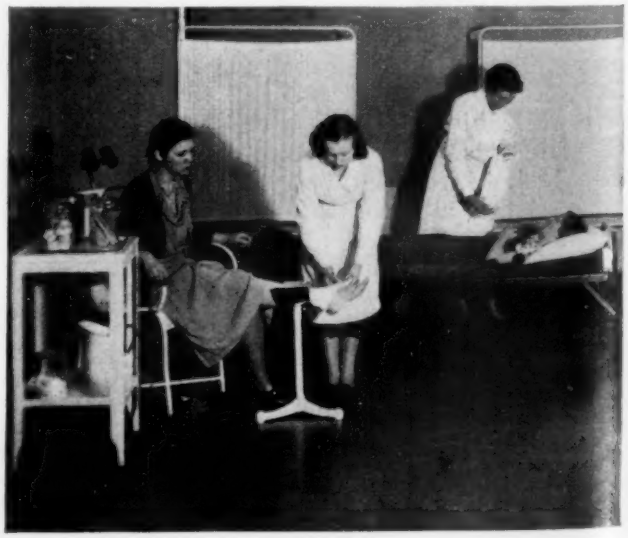
A patient, ready for a bed bath.

aseptic care for cuts, burns and blisters; how to apply bandages and tourniquets; how to read a clinical thermometer and to count pulse and respirations; and how to attend a bed patient (the girls act as patients); this includes making beds, arranging the pillows, lifting the patient and giving a bed bath. Heart disease, tuberculosis and cancer, the three diseases which cause the greatest percentage of mortality, are discussed, and some precautions to avoid them are given. Practical information in relation to diabetes, influenza, pneumonia, colds, constipation and kidney diseases is also presented. Each year, early in the fall, the girls give talks on colds and demonstrate an inhalation in every homeroom. The class is warned against the promiscuous use of ice caps and hot water bottles, and the taking of enemas and physics for severe pains in the abdomen because of the danger of an inflamed appendix. Topics which prove of special interest and immediate practical value are those of personal hygiene, posture and the choosing of appropriate wearing apparel and properly fitting shoes. Much enthusiasm is displayed by the class in planning well balanced menus for themselves and diets for special conditions existing in their own families.

During the second semester the influence of the ductless glands, the anatomy and the physiology of reproduction are considered; discussions of prenatal, infant and child care and of adolescent problems are carried on. Real babies, borrowed from friends or relatives of the girls, are used to demonstrate a bath, layettes, dressing and undressing, handling and the feeding of infants. The girls volunteer for shopping tours in the downtown stores on a budget of $10 for comparative prices and values in layettes. They collect and take notes on appropriate toys, books and pets for the preschool child. Their reports and exhibits are always interesting and educational for the class. The girls each year make a Baby Book which is compiled from notes, magazine pictures and sketches to illustrate prenatal, infant and child care. Many of the books are original and artistic. During the last part of the semester, trips to hospitals, clinics, laboratories and institutions are arranged for the classes.

The girls wear white smocks during class demonstrations and in the first aid room. They are permitted to take care of minor cuts and injuries, are taught to answer the telephone intelligently and are appointed to keep the file which contains the health record of every student in school. After a student has been examined by the school doctor, the girls check his physical defects on printed forms which are sent to his parents for their information and signature. During the day, selected students visit the girls' restrooms to inspect their sanitary conditions and to report to the nurse any loitering or indisposed girls.

A daily record is kept of all the nurse's services to the students, including everything from treating cuts and injuries to washing clothes, drying and mending hose, taping heels on shoes, sewing on buttons, furnishing safety-pins and handkerchiefs, and supplying adhesive for fencing foils. During the last year more than 2,000 students received first aid. On the recommendation of the department, fifteen pairs of glasses were supplied, five tonsil operations were arranged and twenty students were sent to the clinics for various types of medical treatments. Four fractures occurred: a leg, two wrists and an arm. A boy who disobeyed the rules of the laboratory received a serious eye injury. Other instances of the value of the department were demonstrated when a girl who reported to the nurse with severe pains in her abdomen was taken home and then operated on for appendicitis within twelve hours, and when another girl was shown, at her mother's request, how to give herself insulin.

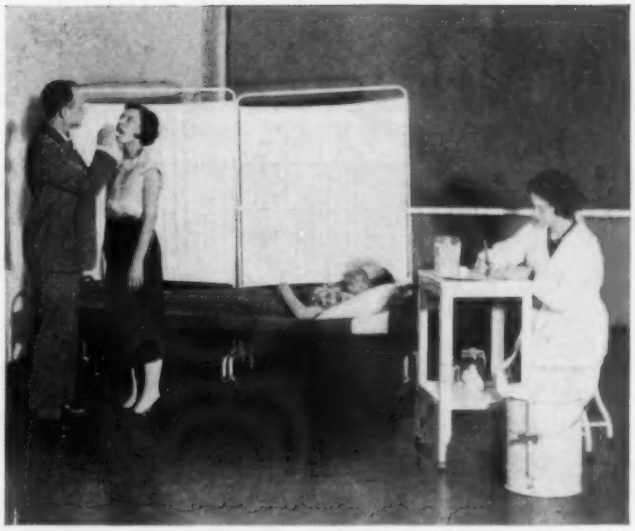


A student board of health, composed of the vice presidents of each homeroom, was organized recently. It meets once a month to discuss school health topics and sanitary problems, such as the temperature and ventilation of the classrooms and sanitary conditions of the restrooms, drinking fountains, halls and cafeteria. The members report to the nurse any questionable skin conditions observed, "wet colds," injuries which may require first aid, and students who may need financial assistance.

The cooperation of the various departments has been the means of stimulating and sustaining a personal desire for healthful living. The physical education department requests each year talks by the nurse on bathing, menstruation and first aid. The science department asks to share with us the lectures by the school doctors regarding personal hygiene, heredity and reproduction. The home economics department assists with a course in invalid cookery, examples of dainty trays and the making of layettes.

The school doctor is an important resource in the health program. He comes once a week. He ratifies excuses from family doctors who prohibit certain students from taking part in the regular physical education program; he examines the boys who expect to participate in athletic sports and new students who have no previous health record, and he investigates special cases, such as diseases of the respiratory tract, thyroid disturbances, inadequate nutrition, skin conditions and abnormal hearts. The nurse confers further with all these special students to note whether their schedules are adjusted to their physical capacities, to assign rest periods in school and to advise extra nourishment for those who need it.

The adolescent period, as every one knows, is a particularly difficult one. The nurse's department should be a place to go for help, sympathy and understanding as such occasions arise. Some of these problems were financial during the last year. There was a special demand for free lunches, car fare, clothing, shoes and books for many students. These were provided from various organizations and, when necessary, medical care was arranged at the city clinics.



The school doctor makes his examinations while a girl student writes the report.

The function of the high school nurse is often misunderstood by the parents and public. Frequently a student who is indisposed is sent to school by the parents to consult the nurse. This is not encouraged, as it is considered a shifting to the school of a responsibility that rightly belongs to the family. The school nurse does not diagnose; she does not give treatments; she does, however, explain to the students and parents the necessity for medical advice, and she urges consultation with the family physician. In cases in which the family is unable to pay, she secures proper services from the city clinics or social organizations.

All these activities compose, indeed, a full day's program for the high school nurse, often testing to the limit the patience, resourcefulness and endurance of the teacher, nurse, counselor, or whatever additional rôle she is called on to assume.

For these duties, what are the qualifications? One should have four years of high school work or its equivalent; a B.A. or B.S. degree including courses in biology, personal hygiene, food chemistry, psychology, sociology, and principles and practice of teaching; a diploma from an accredited school of nursing which should be registered in the state, and some experience in public health nursing. During the last decade the general opinion of the nurse's function in the high school has changed from that of a trained nurse who used the iodine freely to that of the health counselor, a member of the high school faculty with a well defined course of study and an established place academically in the service of modern education.

Three class demonstrations: bandaging a sprained ankle; applying a hot water bottle, and removing a foreign object from the eye.

The Final Illness of Washington

A historically correct engraving, reproduced in the Columbian Magazine, 1846, shows the death-bed scene at the moment of Washington's death: Colonel Lear indicates by uplifted hand that all is over; Dr. Craik is at the head of the bed; Mrs. Washington at the foot; in the background are Cristopher and other servants.

NEXT IN INTEREST to the manner in which a great man lives is the manner in which he dies. In sickness, traits of character may be revealed that were not discoverable in health, and with the near approach of death the soul of man sometimes casts off its last earthly disguise.

Although the facts are available, strangely enough the story of Washington's last illness is imperfectly known. The nature of his disease and the manner of his death have sometimes been enveloped in mystery, and wholly erroneous accounts have gained a certain credence.

The explanation for this is not difficult to find. News of the first President's death came suddenly on the country, which was in no way prepared for such an event. The prevailing thought of him at the time was of a man of robust health, marvelous energy and enduring vitality.

There had not been any intimation of failing health. There had been, in fact, recent reports of his attending social functions and public ceremonies, and he was known to be every day on the back of his horse, riding about his plantations and the neighboring country. Then suddenly, on one Sunday morning, December 15, came the appalling news that Washington lived no more. He had died the night before; and what was more mystifying, death had followed an illness of only two days' standing.

No wonder that questions arose as to the nature of the illness and the cause of his death. Did he receive proper medical attention? Was the illness different from that named? Had he perhaps suffered some accident?

Contrary to the view then prevailing, and indeed contrary to that now widely held, Washington was not naturally a robust person. He had started with a bad inheritance; his father died at 48, and his father's father lived only to the age of 37. Most of his brothers passed away before reaching 50; his half brother, Lawrence, succumbed at the early age of 34, without doubt the victim of pulmonary consumption.

George himself had suffered many illnesses even from his youth. He had had smallpox when only 19 years old, and he was frequently the victim of dysentery and attacks of malaria. He had also suffered from inflammation of the chest, had had considerable throat trouble and had manifested at times symptoms suggestive of acute frontal sinusitis. On three occasions he was near death's door; once, in 1758, when he was suffering from what he himself thought was consumption; once, in 1789, from a severe attack of carbuncle of the hip, and the third time, in 1790, from an attack of pneumonia, probably complicated with pleurisy.

Washington's physicians issued a few days after his death a bulletin giving a brief account

of his illness and their diagnosis and treatment; but one gets much more information valuable for the purpose of reviewing the case from the detailed and circumstantial narrative that has come down in writing from the pen of his devoted secretary Tobias Lear.

Under date of December 14, Colonel Lear wrote: "This day being marked by an event which will be memorable in the history of America, and perhaps of the world, I will give a particular statement of it, to which I was an eye-witness."

On the day before, according to Lear, in spite of the fact that the weather was cold and disagreeable, marked by alternate snow and rain, Washington mounted his horse and visited his various farms.

On his return his coat was wet through and snow was clinging to his hair, but without changing his clothes he sat down to his dinner which was waiting.

The next day, Friday, on account of the heavy snow the General did not ride in the morning; during the afternoon, however, the weather having cleared a little, he went out to mark some trees he wanted cut down. The cold he had caught the day before grew noticeably worse. Sore throat developed, accompanied by hoarseness. He, however, made light of his cold, refused to take any medicine and read aloud as long as his voice would allow him in spite of the hoarseness.

Early Saturday morning, about 3 o'clock, the General awoke Mrs. Washington to let her know that he had had a chill and was not feeling well; but when she wanted to get up and call a servant, he would not allow her for fear that she herself might take a cold. When Lear first saw him, which was shortly afterward, he was alarmed on observing that he "breathed with difficulty, and could scarcely utter a word intelligibly."

By
W. A. WELLS

At Washington's own request, the overseer was sought to come and bleed him. When the latter went about this operation rather timidly, the patient directed him to make the cut larger and let the blood flow more freely. Only half a pint of blood was taken, says Lear, at this time.

Later in the morning, some home remedies were applied. The patient was given a mixture of molasses, vinegar and butter, but, says Lear, he "could not swallow a drop," and when he attempted to do so, appeared "distressed, convulsed and almost suffocated." The throat was exceedingly sore to the touch.

Dr. Craik, his intimate friend as well as personal physician, arrived shortly after 9 o'clock. He put a blister to the throat, ordered steam inhalation of vinegar and hot water, and a gargle of vinegar and sage tea; then he bled the patient.

On attempting to gargle, Washington was almost suffocated; a little phlegm came up, but he was not able to cough effectively.

When it was seen that the General was seriously ill, messages were dispatched for Drs. Gustavus R. Brown and Elisha C. Dick. In the meantime, while awaiting their arrival, the patient was bled again.

The two consulting physicians arrived, one shortly after the other in the afternoon, and then a consultation was held. It was decided that the patient should be bled again for the fourth time in the course of that day.

Lear records that the hoarseness increased toward evening so that the great man was scarcely able to speak at all; the swallowing became more painful and difficult, and the breathing was labored. About 10 o'clock, Washington became evidently weaker; he tried to speak but could scarcely make himself understood. Apparently the only one of the physicians in the room at this time was Dr. Craik. He was sitting by the fire, absorbed in grief.

Now Lear, at this juncture, records a remarkable incident of which little notice has been taken. The distinguished patient had no doubt been encouraged by those about him to believe that he would get well; and no doubt at the same time their troubled expressions belied their words. However, from a long experience in personally attending to the health of his sick slaves and servants, Washington had acquired considerable medical knowledge, including that of the signs of the pulse. He desired now to know the true state of his own vital forces.

> "About ten minutes before he expired," wrote Lear, who was at the time sitting by the bedside, "his breathing became easier, and he lay quietly; then he withdrew his hand from mine and felt his pulse."

Washington thus evidently realized that the end had come and gave up hope; for immediately, as remarked by Lear, a great change came over his countenance, and his hand fell lifeless to his side.

It may then be truthfully affirmed that the last act in the life of the Father of our Country was one strictly appertaining to the art of medicine.

One of the questions which has agitated the minds of the medical profession ever since the day of Washington's death follows: What was the exact nature of his last illness?

In a signed statement given out by his attending physicians a few days after his death and published first in an Alexandria paper, the diagnosis was given as cynanche trachealis, an inflammation affecting the larynx or windpipe.

From a letter written later on by Dr. Brown to Dr. Craik, one learns that this was not the original diagnosis; that, at first, Washington's disease was considered to be a case of quinsy,

an inflammation affecting the tonsillar region and attended by an abscess either in the tonsils or in the tissues surrounding them. This diagnosis was given up, however, in favor of the disease named, owing to the influence of Dr. Dick, who persuaded the other two physicians on the case that Washington's trouble was not in the upper portion of the throat at all but lower down; that is, in the region of the larynx or the windpipe.

This was some years prior to the discovery of the germ causing diphtheria. Diphtheria, therefore, as it is known today, was unknown to the profession of that date. It was, however, a disease which often occurred and was, in a way, clinically recognized.

In fact, it is quite certain, from an article written by Dr. Dick in a medical magazine some years later, that this was the disease he had in mind when he used the term cynanche trachealis.

As I have said, modern writers commenting on Washington's illness have differed in their opinion as to the real nature of the disease. No less an authority than the great Dr. William Osler accepted the diagnosis of diphtheria as the correct one. Some writers are of the opinion that death was due to pneumonia. However, the diagnosis still most commonly given is that of quinsy—the one originally held by his own attending physicians but afterward abandoned.

Having devoted a number of years especially to the subject of throat ailments, I was naturally interested. My first thought was that none of the three diagnoses given seemed to fit properly the facts of the case. Diphtheria in a man of this age is, in the first place, extremely rare. It is a disease preeminently of infancy and early childhood, and it often proves fatal to these young patients by closing up the passage of the larynx through the formation of a false membrane; but the larynx of the adult is different from that of the young child, and it is not affected by diphtheria in the same way. Quinsy is a disease likewise comparatively rare in the aged, being especially incident to young adult life. It is a painful and distressing affliction, but only rarely does it prove fatal at any age.

Washington died after an illness of only forty-eight hours. The abscess of quinsy could not even develop in that short period. As for pneumonia, it is out of the question. The history of the case is definitely that of a throat ailment and not of a chest ailment.

With the foregoing thoughts in mind, I reviewed Washington's illness in the light of the present advanced state of knowledge of medicine as appertaining to such a case.

I shall not here enter into a technical discussion of the medical question. I shall only say that the result of the studies was the conclusion that Washington died of a disease which today physicians would designate as an edematous inflammation of the larynx caused in all probability by a streptococcic infection.

To realize something of what this means, picture the larynx as a cylindric tube, primarily for the passage of air to the lungs but secondarily utilized as the seat of the organ of the voice.

By the location of the vocal bands near the top of this tube there is a necessary narrowing of the air passage here constituting a point of danger in case of obstruction. The soft yielding membrane which lines its interior becomes swollen in case of inflammation; when the swelling encroaches on the glottis, or narrow opening between the vocal bands, suffocation is imminent.

Edematous inflammation means an inflammation caused by a watery infiltration of tissues, resulting in a high degree of puffiness or swelling. It is a form of inflammation to which middle aged and elderly men are especially subject. When it occurs suddenly and violently, the doctor knows from experience that it is usually due to a virulent micro-organism called the streptococcus.

The symptoms presented in Washington's last illness were exactly those which one would expect to find in a disease of this nature.

His death, therefore, in my belief is to be ascribed to a dyspnea, or air starvation, resulting from an acute inflammatory swelling located at a critical point in the larynx, in association with the debilitating influence of a profound streptococcic toxemia.

It is not to the discredit of Washington's physicians that they did not arrive at the same diagnosis, for one cannot demand of them medical information beyond the time in which they lived. It must be remembered that the profession at that time lacked knowledge in respect to two things that are today commonplace in practice and essential in dealing with a case of this kind; namely, the art of laryngoscopy and the science of bacteriology.

The first thing that a doctor would proceed to do in a case presenting such symptoms today would be to examine the larynx by means of the laryngoscope; the second would be to take a culture of the throat so as to determine the bacterial character of the inflammation.

The laryngoscope, invented by Babington in 1829 and reinvented by Garcia in 1850, did not begin to be applied to medical practice until about 1858.

Bacteriology was of still later development. It was not until about 1871 that Pasteur discovered micro-organisms in certain virulent diseases in animals and not until 1877 that Koch

definitely proved their causative relationship to diseases in man. The streptococcus was not discovered until 1878 and the germ of diphtheria not until 1883.

Washington's physicians have been severely criticized too for the treatment of the case. They have been blamed especially for the subjection of the patient to excessive bleeding. Some persons have gone so far as to claim that this was the cause of the fatal termination.

The records show that the treatment consisted in purgation, diaphoresis (the use of medicine to produce perspiration), the applications of poultices and blisters, the administration of gargles and inhalations, and the employment of bleeding. Washington was subjected to the lance four times in the course of the day. In order to be able to pass just judgment on this treatment, it is proper that one should first inform oneself as to what was considered the best current medical opinion of the times. In doing this, one will be convinced that the treatment followed was in exact line with that advised by the highest recognized authorities.

No doubt the leading medical school of the world at that particular era was the University of Edinburg, and Dr. William Cullen, the professor of medicine at that university, was probably regarded as the highest living authority of his day. His textbook on medical practice was the "Bible" of all medical students and physicians in America as well as in England. In his chapter on cynanche trachealis he writes about treatment of this disease, especially in the matter of bleeding, as follows: "As we suppose the disease to be of inflammatory origin, so we attempt cure by the usual remedies of inflammation and which for the most part we have found effectual. Bleeding, both topical and general, has often given almost immediate relief and bleeding repeatedly has entirely cured the disease."

Washington was not subjected to excessive bleeding according to the prevailing standards. The amount of blood taken was usually proportioned to the size and weight of the patient. Washington was a man more than 6 feet in height, with weight well over 200 pounds. It was not unusual for patients of such stature to give up at one bleeding the amount taken, in his case, during the entire day. In fact, the advice was often given to carry the bleeding on to the point that the patient lost consciousness.

Incidentally, it might be mentioned that Washington himself was a firm believer in the efficacy of bleeding. He ordered it frequently for his sick slaves and his horses. It was the first thing he prescribed for himself when he was taken ill, and when Rawlins, his overseer, went about it, as Washington thought, too cautiously, he told him to make the wound larger and to bleed more freely.

In answer then to the question whether Washington was properly treated, I should say "yes," according to the standards of the times and "no," according to present knowledge. In answer to the question as to whether the excessive bleeding was the cause of his death, I should say, certainly not of itself though possibly it was contributory. Washington was the victim of an illness of great virulence and under all circumstances of extreme gravity, an illness tending almost inevitably toward death unless combated by measures which one could not expect would have been applied in those days.

The next question, and a natural one, follows: Could Washington have been saved if he had had the benefit of the art of medicine as practiced today? The answer is probably "yes." The methods of handling such a case today are an immense improvement over those of a century ago.

Since that day new therapeutic agents have been discovered, new instruments have been devised, and a new technic has been developed. Instead of working, as was then done, in the dark and depending on the uncertain operation of general remedies, physicians today apply treatment directly to the organ affected.

If medicine alone proved insufficient, resort would be had to surgical measures, either tracheotomy, at that time but little known and almost never practiced in such cases, or intubation, an entirely modern procedure.

The physicians in attendance on Washington during his last illness were Drs. James Craik, his dear old comrade in arms and personal physician; Gustavus Richard Brown, also a friend, who lived in grand style just across the river in Port Tobacco, Md., and Elisha Dick, a Pennsylvanian by birth but now a successful practitioner of Alexandria. All three were college trained men; Craik and Brown had attended the famous University of Edinburg and Dick the new Medical University of Pennsylvania. Dr. Craik, then 69, was the eldest; Dr. Brown was 51, and Dr. Dick was only 37.

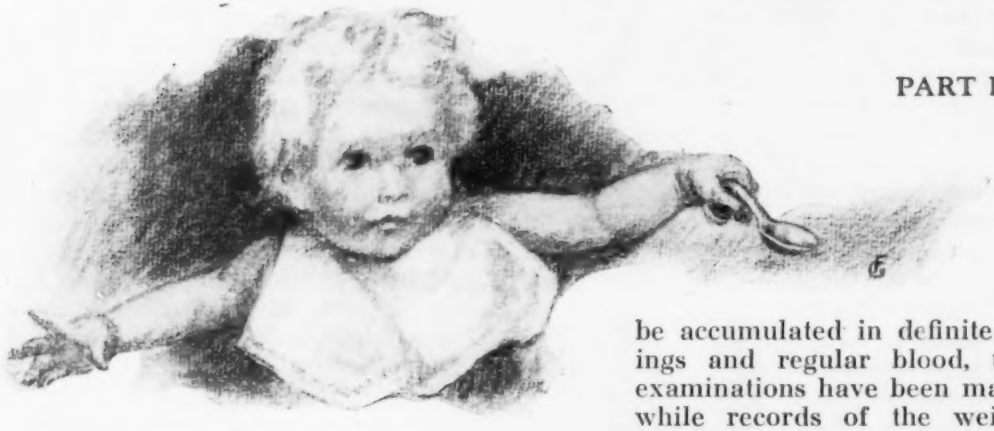
At the consultation, Dr. Craik represented the natural conservativeness of old age and Dr. Dick the progressiveness of youth, while Dr. Brown held a middle place between them.

Dr. Dick, though the youngest, did not hesitate to assert his opinion in a positive way. Dr. Brown testifies that Dr. Dick opposed the practice of bleeding, and Dr. Dick himself records that he proposed the operation of tracheotomy as the only means of saving the patient's life.

(Continued on page 139)

Why Think About Eating?

PART I



WHY THINK about eating? Does the new-born baby think about eating? If he is full grown and healthy he seems at least to be interested, judging from the fuss that he is certain to make if at the end of the first twenty-four hours he does not get satisfactory attention from his mother. But does he think about eating? He does not. He simply feels and seems to know that there is something in his environment that is ready for him—a banquet.

At Mount Sinai Hospital about six years ago, Dr. Clara Davis inaugurated a most novel experiment which from beginning to end is pertinent to this subject.

She decided to determine whether newly weaned human infants could choose for themselves from a liberal variety of foods, both from a quantitative and from a qualitative standpoint, a diet which would be adequate for normal growth and development. To date, fifteen infants have been observed by Dr. Davis. From her last publication (What Infants on the Self Selected Diet Experiment Eat, *Tr. Sect. Dis. Child.,* A. M. A. p. 137, 1930), which included observations on thirteen of the infants. I quote liberally because of the important bearing that her observations have on the answer to this question:

"It is an experiment in which a list of simple, unmixed foods has been made up, and of these foods newly weaned infants from 6 to 11 months of age have been allowed to eat what they chose and as much as they wished without suggestion or interference from adults. Thirteen infants have thus far been on the experiment. Not a particularly impressive number, but the length of time they have been kept on it is somewhat unique. Three of them have completed periods of six months each; the others, periods of one to three and a half years, respectively. In order that the results of the experiment might be accumulated in definite form, daily weighings and regular blood, urine and physical examinations have been made on every infant, while records of the weighed or measured quantities of everything served and eaten have been kept. Records are now complete for the more than 21,800 meals that have been served to these infants.

"The food list of the experiment comprises a full range of edible meat products, sea fish, eggs, nine vegetables, five cereals, six fruits, milk, sweet and sour (that is, fermented lactic) and sea salt.

TABLE 1.—*Foods Used in Experiment*

Meats (muscle cuts)	Eggs
Beef	Milks
Lamb	Grade A raw milk
Chicken	Grade A raw whole lactic milk
Glandular organs	Fruits
Liver	Apples
Kidney	Oranges
Brains	Bananas
Sweetbreads (thymus)	Tomatoes
Sea food	Peaches or pineapple
Sea fish (haddock)	Vegetables
Cereals	Lettuce
Whole wheat (unprocessed)	Cabbage
Oatmeal (Scotch)	Spinach
Barley (whole grains)	Cauliflower
Corn meal (yellow)	Peas
Rye (Ry-Krisp)	Beets
Bone products	Carrots
Bone marrow (beef and veal)	Turnips
Bone jelly (soluble bone substances)	Potatoes
	Incidentals
	Sea salt (Seisal)

"To insure each article being chosen for itself alone, dishes made by combining these foods, such as breads, soups or custards, are not used. Also, for the purpose of keeping the experiment to its simplest terms, canned foods and derived products, such as butter and sugar, are excluded. Only foods obtainable fresh in the market the year round are used. Three meals a day are served, each meal consisting of eight to eleven articles, the articles appearing at each meal according to a fixed schedule. Cooking is done in the simplest manner without the addition of salt or other seasoning and without loss of water or soluble substances. Each food, finely divided, is served in a separate dish, the dishes being placed on a tray without any defi-

nite arrangement. The tray is placed on a low table at which the infant sits. Infants may feed themselves by eating with their hands, if they can; if not able to do this, the nurse who sits beside the infant puts into his mouth with a spoon whatever food he reaches for, but only when he does indicate his choice. She may not offer him any, refuse him any for which he reaches, talk to him or try to teach him table manners. Emptied dishes are promptly refilled so that he may have all he wants of every article served. . . .

"In their appeal to infants' tastes as judged by performance of these infants, the foods on this list fall into three classes:

"1. Those that almost all of the infants have liked continuously, regardless of age or of the length of time they have been on the experiment.

TABLE 2.—*Most Popular Foods*

Meats	Beets	Bananas
Potatoes	Peas	Oranges
Carrots	Apples	Egg

"2. Those foods that are liked by most of the infants, but not by all, or that have not been eaten by some of the infants for months at a time, and those that have been eaten in much greater quantity at one age than at another.

TABLE 3.—*Foods Next in Popularity*

Pineapple	Wheat	Corn meal
Peaches	Milks, sweet or lactic, or both	Bone marrow
Cabbage		Glandular organs
Cauliflower	Ry-Krisp	Sea fish
Oatmeal		

"3. Generally unpopular foods eaten in small amounts or not at all by most of the infants.

TABLE 4.—*Generally Unpopular Foods*

Spinach	Turnips
Lettuce	Barley

"Were these infants considered only with respect to the first and third groups, one could say: 'How alike are their likes and dislikes'; but when the second group is taken into consideration, the answer to the question 'Do they choose the same things?' appears to be: 'No more and no less than do healthy adults.' Thus we have had in the nursery at the same time infants that took only sweet, only lactic, or no milk at all. Some ate glandular organs, others left them severely alone; some drank little orange juice, others often drank from a pint to a quart a day.

"Have they selected such meals as have been usually thought good for infants of this age? On the whole the answer must, I think, be 'no,' for they have eaten meat and fruits often in excess of amounts commonly consumed by adults. Their daily average quantity of milk has rarely exceeded a pint, while two did not drink any for months at a time. They have not liked spinach, and during the first six months after weaning, cereals have formed a much smaller part of the diet than we have usually considered essential for this age. . . .

"Like other infants, these have occasional colds and we have had one epidemic at the nursery . . . which affected all the infants simultaneously. During these acute infections, trays were served as usual without change or omission of any of the foods regardless of the height of the infant's fever. During incubation periods there has always been a slight reduction in the daily calories, followed by a sharp drop during the acute febrile period. Convalescence has always been marked by a swift rebound of appetite with the consumption of unusually large quantities of raw beef, carrots and beets.

"On hot, humid days, the infants have drunk more orange juice, often 8 to 16 ounces at a meal, have eaten more fruit and less meat and vegetables, and the total amount of food eaten as shown by their daily calories has been less.

TABLE 5.—*Noon Meal of Abraham G., Aged Three and One-Half Years*

Whole milk	80 Cc.	(2⅔ oz.)
Ry-Krisp	110 Gm.	(3⅔ oz.)
Beets	50 Gm.	(1⅔ oz.)
Corn meal	5 Gm.	(⅙ oz.)
Bone marrow (raw)	5 Gm.	(⅙ oz.)
Beef (raw)	25 Gm.	(⅚ oz.)
Beef (cooked)	15 Gm.	(½ oz.)
Lamb (cooked)	410 Gm.	(13⅔ oz.)

"Cold, sparkling winter days have brought large demands for meat, potatoes and cereals and on such days the daily calories have reached their maximum, especially if the infants have been outdoors and had exercise. For example, Abraham G., aged 3½ years, after playing out in the snow, ate for his noon meal the food shown in table 5.

"Such large meals as this have been by no means the rule and there has been greater variation in the quantities eaten at different meals than is contemplated in the preparation of ordinary diet lists. Month in and month out, however, all have eaten more than is called for by commonly accepted standards. . . .

By HENRY J. GERSTENBERGER

"Considering the records of what the individuals have eaten and finding that no two have chosen alike, that they have changed often and unpredictably in their tastes, one cannot avoid the impression that there is neither rhyme nor reason to it. But if their food records are studied month by month as expressed in protein, carbohydrate, fat, calories, acidity and alkalinity, instead of as beef, bananas, and so forth, law and order begin to appear out of the chaos. The relation between these different food elements and the relation of calories to weight are found to have some similarity.

Somehow these orderly results have been achieved out of the seemingly erratic choices that differ with each individual. Herein, apparently, lies whatever law and order can be discovered in the eating of these infants to whom this assortment of foods has been available and who have been governed in their eating of them solely by the dictates of taste."

In an earlier article on the observations made by Dr. Davis on the first three infants (Self Selection Diet by Newly Weaned Infants, *China M. J.* 43: 68 [Jan.] 1929), she reports as follows:

"We have no clue as to what influenced these infants in choosing the foods they tried first, and whether the choice was only a random one or whether they were attracted by color or odor or both are psychologic questions I am not competent to answer. There could be no question, however, that after the first few meals the foods wanted were promptly recognized and chosen, as they were reached for without hesitation no matter what was their location on the tray, others nearer at hand and brighter in color often being neglected. Each infant in the beginning chose some foods which, after he had gotten them into his mouth, he spat out. Later, this did not happen.

"All three infants showed themselves to be omnivorous with a liking for most of the foods on the list, but rarely ate more than three solid foods in any considerable quantity at one meal. They showed decided preferences, but in spite of this it proved impossible to predict what would be eaten at a given meal, e. g., an infant might eat from one to seven eggs or none, or from one to four bananas. Even the daily consumption of milk was unpredictable, varying from 11 to 48 ounces (325.25 to 1,419 cc.). Salt they ate only occasionally, often spluttering, choking or even crying bitterly after getting it in the mouth but never trying to spit it out and frequently going back for more, with a repetition of the same spluttering. A tendency was observed in all the infants to eat certain foods in waves, i. e., after eating cereals, eggs, meats or fruits, in small or moderate amounts for a number of days, there would follow a period of a week or longer in which a particular food or class of foods was eaten in larger and larger quantities until astonishingly large amounts were taken; after this, the quantities would decline to the previous level. In the diet kitchen such waves came to be known as 'egg jags,' 'meat jags,' 'cereal jags.' Symptoms of overeating did not accompany them, nor were the waves followed by a period of temporary disgust for and neglect of the particular food as is usual when appetite is surfeited. . . .

"The infants did not show any clear preference between raw and cooked foods. Raw beef was preferred to cooked beef unless the latter was rare, when little difference was noted. Oatmeal and wheat were definitely preferred cooked, bananas raw, bone marrow cooked, and eggs, carrots and peas were eaten well either way.

"At the age of 10 to 11 months, each infant began to dip his Ry-Krisp in milk or water. (Dipping crackers or bread in milk or water is also done by crows and raccoons.) This was done, apparently, only for the purpose of softening it, as the infants would dip it, try it, dip it again, and repeat the process until it just suited them. The procedure was probably due to the tenderness of the gums, as it was most frequently done when new teeth were about to erupt. Attempts to mix foods or pour milk over any were not observed. Several solid foods were usually taken at each meal, and the liquids—milk, orange juice and water—were drunk at intervals during the progress of their meal, as is the habit with adults. . . .

"None of the infants ever gave any evidence of discomfort or abdominal pain after eating or were constipated."

These observations by Dr. Davis are truly a most interesting and important revelation. It is perfectly clear from her work that the human infant at the age of 6 months is able to choose for himself, certainly without thinking, a satisfactory diet. He seemingly makes his choices for the same reason that prompts the polyneuritic pigeon to pick out the wheat in place of the polished rice when both food materials are offered as a mixture. The pigeon gets neuritis when he is fed rice that has lost its vitamin B content as the result of being polished white, a process which removes the natural covering which contains the B vitamin. The pigeon will respond in this correct manner even though he is quite ill and even though the period during which he was fed only the polished rice has lasted a month or more.

Old-fashioned persons will conclude that both the human infant and the pigeon behave as they do because of the presence of an inherent instinct. Modern psychologists, however, at least those who belong to the behavioristic group, will give the credit to the development of a conditional reflex. By conditional reflex is meant a response elicited on the basis of a previous experience. If, for instance, you let a hungry infant smell a rose immediately before giving him his bottle, he will after a number of such experiences react regularly by opening his mouth whenever you let him smell the rose,

even though there is no bottle in sight. If, instead of pleasing him with the desired meal, you were to give him something really obnoxious, he would respond with an objection in the form of crying or keeping his mouth closed.

Can we on the basis of these observations answer our question in a negative manner? My answer is "no." We cannot avoid thinking about eating and thinking about it intelligently, because it is impossible to have at hand for all of us a Dr. Davis to place before us as she did before the infants and children daily, yes, three times daily, a variety of foods which together presented a liberal offering of all the essential food constituents.

I must make clear that it is not Dr. Davis' idea that the plan followed by her in her investigations should be adopted in a practical manner. She realizes fully that the accompanying waste and the ensuing expense are prohibitive. Also she knows and emphasizes that if infants were permitted to still their hunger in this unrestricted manner from the offerings of the common family table, the results in many instances would be dire. Why? Because, principally on account of ignorance, too many family tables do not carry foods that together enable the individual member to get what he or she positively needs for normal growth and development; namely, a minimum of all the essential food constituents and, still better, an optimum. Moreover, in some instances, particularly during periods of unemployment, the food available will not suffice to meet even the ordinary fuel requirements of the body. And yet even under such dire circumstances it is possible to improve matters considerably. So many good books have been written by physicians and dietitians that it seems unnecessary to name what today are accepted as essential food constituents and to describe their functions.

Human milk produced by a healthy mother eating an adequate diet contains them all in the form best adapted to meet the needs of the growing infant. The younger the infant, the more important is it that he should be given his natural food.

Cow's milk also contains all the essential constituents found in human milk, but some vary in quantity and some in chemical and biologic quality. Nevertheless, cow's milk is, next to human milk, the most complete food at one's disposal, containing within itself the necessary proteins, fats, carbohydrates, minerals, vitamins and water, and other less known and even unknown substances.

However, while cow's milk is civilization's most valuable and economical source of essential food constituents, it can do harm when used to excess. This applies particularly to older infants and to young children whose appetite for other valuable food substances, such as fruits, vegetables, eggs, meats and cereals, under such circumstances is crowded out. Pediatricians long ago had their attention called to this danger by European authors, particularly by Professor Czerny of the University of Berlin (Czerny, A., and Keller, A.: Des Kindes Ehrnährung, Ehrnährungsstörungen und Ehrnährungstherapie, ed. 2, Leipzig, Franz Deuticke 2: 10, 1928). Observations such as those of Dr. Davis will do much in this country, where the pendulum of feeding rather liberal quantities of cow's milk has, in many instances, swung too far.

[NOTE.—In part II of this article, which will appear in the March issue, Dr. Gerstenberger will discuss the factors which determine the size and weight of human beings.]

The Final Illness of Washington

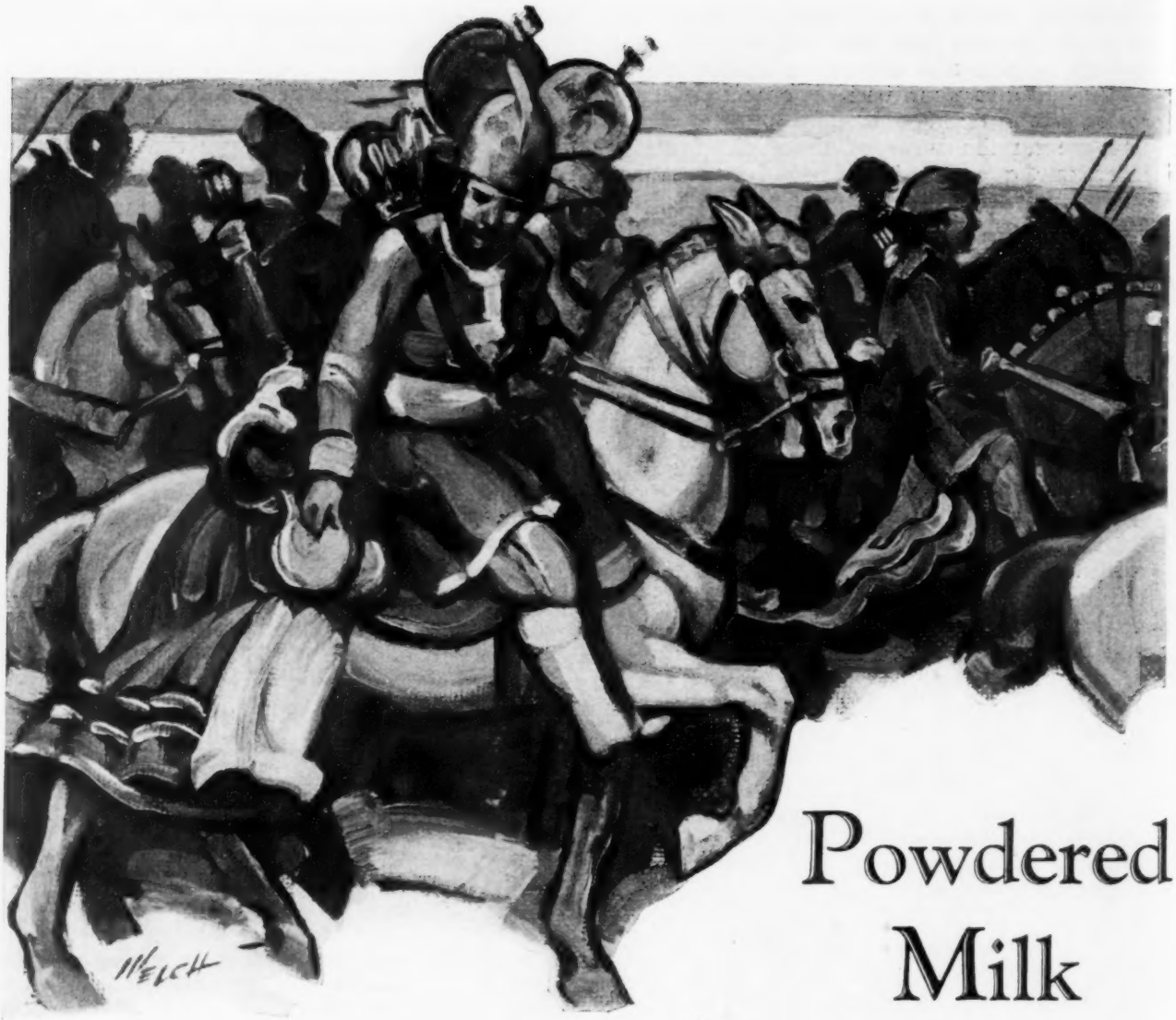
Continued from page 135

Looking back, one cannot but wonder at and admire the unusual knowledge and wise counsel of this young physician. However, he was overruled by his elder colleagues. Dr. Craik stood out for the old and accepted practice, and he won Dr. Brown over to his side.

That differences of opinion should have arisen among the doctors in attendance on Washington is nothing extraordinary, nor is it to be wondered at that the outside world was much perplexed as to the nature of his illness. There is, however, no reason to this day and generation that a mystery should be made of the case.

It is seldom that the dying days of any great man have been so open to inspection as those of Washington. In fact, a combination of professional and lay records gives one, as it were, a complete clinical history of the case from the cause to the conclusion. Every symptom is accurately related, and every therapeutic measure with its resulting reaction is carefully noted. One need only analyze the available data in the light of medical knowledge of today.

The present study has led to a definite opinion as to the nature of the illness. Incidentally, it has led also to a definite conviction as to the character of the patient. It is impossible for any one to become aware of the remarkable fortitude, patience and self effacing consideration for others exhibited by the great Commander in this, his last struggle, without being profoundly impressed by the inherent nobility of the man.



Powdered Milk

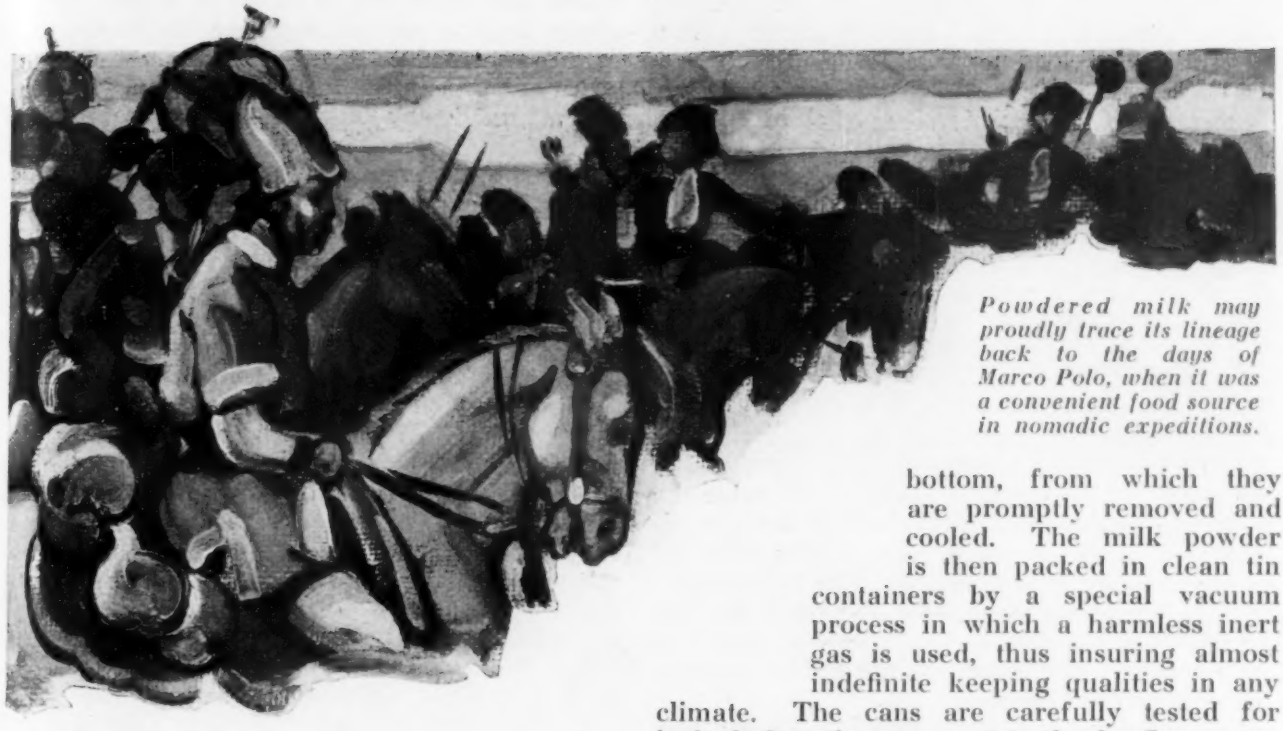
SEVEN centuries ago the world's most famous traveler arrived at the palace of the Orient's most illustrious potentate, a personage so exalted that it has been said of him that "he on honey-dew hath fed, and drunk the milk of Paradise." But Marco Polo, the Venetian, received from his imperial host even better fare than that, for the Mongol emperor regaled his guest with milk from the white mares of his own private stables. Kublai Khan entertained so well, in fact, that Marco Polo remained for many months at his court.

Now these Mongols were nomads who required convenient food supplies for their many expeditions. So, said old "Marco Millions," "they have milk dried into a kind of paste to carry with them"; and in his book about his travels he told how these Mongols of the thirteenth century put the milk in the sun to dry.

"When they go on a journey," he continues, "every man takes some ten pounds of this dried milk with him, and of a morning he will take half a pound of it and put it in his leather bottle, with as much water as he pleases. So, as he rides along, the milk paste and the water get well churned together into a kind of pap, and that makes his dinner."

Although there is evidence that the ancient Egyptians may have used dried milks, the interesting report made by Marco Polo is the first account of such a product. Today powdered milk is extensively used throughout the world; but this valuable commodity is of comparatively recent commercial origin. Although condensed milk has been successfully manufactured for seventy-five years and evaporated milk for fifty, satisfactory processes for drying milk have been developed entirely within the present century.

As early as 1810, tablets of dried milk were made by Nicholas Appert, the Frenchman who invented canning. In 1855 a patent for drying milk was issued to an Englishman named Grimwade, and in 1872 another was granted to an American, Samuel R. Percy; but none of these methods ever enjoyed any considerable



Powdered milk may proudly trace its lineage back to the days of Marco Polo, when it was a convenient food source in nomadic expeditions.

By JAMES A. TOBEY

use. Malted milk, a dry blend of whole milk, wheat flour and barley malt, was patented in 1883 and after 1887 had a constantly growing market.

The Percy method, by which milk was mixed with hot air and blown into a chamber, was modified by Robert Stauf of Germany, who secured an English patent in 1900 and an American one in 1901. A year later, J. A. Just invented a drum drier, which was further improved by J. R. Hatmaker in 1903. Finally in 1906 the Merrell brothers and W. B. Gere patented a new spray process, which is the most widely employed today in the manufacture of milk powder.

The Merrell-Gere process is a picturesque one, for the water is literally shot out of the fluid milk. After a rapid preheating and partial evaporation of carefully selected and laboratory-tested whole milk, the milk is forced under high pressure through a fine nozzle, pin-point in size, into a large sealed chamber. As this mist of milk enters the room, the dimensions of which are about 12 feet on each side, it is met by a current of hot, filtered air.

The result is a veritable blizzard of milk solids. The hot air extracts the natural water of the milk, which passes out as steam through a vent at the top of the chamber, while the solid particles of milk fall like snow to the bottom, from which they are promptly removed and cooled. The milk powder is then packed in clean tin containers by a special vacuum process in which a harmless inert gas is used, thus insuring almost indefinite keeping qualities in any climate. The cans are carefully tested for leaks before they are sent to the far-flung markets of the world.

An entirely different process is used in the so-called Just-Hatmaker roller method. Cold fluid milk is poured into the trough formed by two contiguous steel drums, heated from within by steam. As these drums revolve away from each other, the milk forms a thin film on them as the water evaporates. This powder is automatically scraped off, cooled and placed in tin containers, which are gas packed. One brand of powdered milk made by this process is irradiated before drying, so that its antirachitic properties are improved, and it will prevent rickets in young infants when it is used in the customary dilutions.

Since practically all of the 88 per cent of water in whole milk is removed by the drying process, it is necessary to reliquefy the powder when this form of milk is used as a substitute for the fluid product. This is accomplished by mixing the powder vigorously with water in the proportion of 1 level tablespoonful of whole milk powder to 2 ounces of water. Four ounces of this dried milk, or about 16 level tablespoonfuls, with 29 ounces of water produces a quart of full cream milk, while a pound of a standard powdered whole milk yields a gallon of liquid milk.

One of the advantages of milk powder is the possibility of using it in concentrated form. The whole milk powder contains 28 per cent butter fat, in contrast to an average of 3.5 per cent in fluid milk. It may, obviously, be reliquefied in any desired concentration, or it may be employed as a powder, like flour or sugar. Dried milk may be sprinkled on cereals, or it

may be added to various common recipes, such as those for creamed soups and vegetables.

This system can be employed to advantage in the numerous instances of underweight and malnourished children and adults, and it is likewise often effective in cases of children who suffer from that widespread malady known as anorexia, or lack of appetite. The bulk of fluid milk is sometimes a disadvantage, one which may be overcome by utilizing the precious solids of the "most nearly perfect food," without the water in which nature dissolved and suspended them.

Powdered Milk Is Easily Digested

Another advantage of powdered milk is its superior digestibility. Because of the changes that occur during the manufacturing process, the curds which form in the stomach after the milk has been ingested are easily broken up into fine particles which are readily digested in the most delicate stomach. The fat in dried milk is dispersed throughout the mass, so that no cream line forms when the powder is mixed with water. The cream is present, of course, but it does not rise to the top.

Still other virtues of the dried milks are their cleanliness and safety, their excellent keeping qualities, their unvarying uniformity and their convenience. The heating required effectually destroys all dangerous bacteria which might be present, without affecting the nutritional properties. The powdered milks contain virtually all the dietary elements for which cow's milk is famous. With the exception of vitamin C, which is not particularly abundant in any milk, all the other vitamins are retained without appreciable diminution. This result is due to the rapidity of the method, which obviates prolonged contact with the atmosphere and is characteristic of both the spray and the roller processes.

In addition to powdered whole and powdered skim milks, all properly labeled as to what they are, other dried milks, such as powdered lactic acid and powdered protein milks, are manufactured. These products are extensively prescribed by physicians for infant feeding and sometimes for adults who require easily assimilable nutriments. The powdered milks can often be taken without difficulty by the relatively few persons who are sensitive to fluid milks.

A word should be said about malted milk. This dried product is made by mixing a dried grain known as barley malt with water and wheat flour and heating it until the enzymes in the malt have converted the starch of the wheat into more simple forms of sugar. Fresh whole milk is next added, and the mixture is then evaporated to dryness. The final product has a creamy tint and a pleasant, malty flavor. When mixed with milk, it adds palatability as well as food value and also renders the milk somewhat more digestible. An excellent beverage can be concocted from powdered milk, malted milk and water.

The powdered milks have long been popular for camping and traveling, and have proved invaluable wherever good supplies of fluid milk have been unobtainable. In recent years they have had considerable vogue in infant and child feeding, and more than fifty favorable articles about them have appeared in medical magazines during the past four or five years. These products have been found convenient for storage on the kitchen shelf, as no refrigeration is necessary for keeping the unopened can, and housewives have employed them widely as reserve and regular supplies of clean and safe milk for all culinary purposes.

In recent years the distribution of powdered milk has increased tremendously in this country. The quantity manufactured has, in fact, quadrupled in the short space of ten years, so that today more than 150 million pounds of dried milks are produced annually in the United States. A large proportion of this quantity is dried skim milk, distributed in bulk for such industrial purposes as bread making, the manufacture of ice cream and the preparation of other food products in which milk is a desirable or necessary ingredient. A number of standard brands of the powdered milks put up in 1 pound, 5 pound and even larger cans for retail sale have been accepted and approved by the Committee on Foods of the American Medical Association.

Powdered Milk Is a Reliable Source of Pure Milk

The late Dr. Hermann M. Biggs, health commissioner of New York, once prophesied that eventually all market milk supplies would be in powder form. Certainly there are many sanitary and economic reasons for such a development, although it will probably be some time before this condition is realized. The powdered milks are, however, excellent and reliable sources of the daily quart of pure milk that scientists have determined as the desirable minimum for all growing children and of the daily pint which should be in the regular diets of all adults who seek to promote and maintain good health with the aid of proper nutrition.

Herbert Photos

NATURAL CRYSTAL

A leading scientist of Germany is examining a piece of natural crystal. The mask is worn to protect the eyes, mouth and nose, for breathing dislodges the minutest atoms of crystal.

Photo by Warren Boyer

A downhill ride, a possible tumble into a drift below explains the expression of excitement mingled with enjoyment on the faces of these children of winter. Be careful to strike a soft spot, young chauffeur of the sled!

Ewing Galloway

What sport—departure on a duck hunt in the Northland! Decked with bow and arrows, these Eskimo girls know how to spend their leisure hours.

Keystone-Underwood

AN OLD-FASHIONED DRUG STORE

What, no delicatessen! This drug store, void of soda jerking and luncheon counters, was founded in 1792. Martha Washington once gave an order for a gallon of castor oil. Many other famous personages of American history have traded at the Leadbeater drug store in Alexandria, Va.

TRAINING FOR ATHLETICS AND HEALTH

Chapter II

Three Sides to Every Life

By
ALFRED E. PARKER

SEVERAL years ago in Denver a gang of vivacious boys was playing ball on the street. One chubby youngster hit the ball so fiercely that it moored itself on the ledge of a building, about halfway between the awning and the second story window. Unable to climb to their ball, the boys asked a group of young men to secure it for them.

This request on the part of the boys started the young men debating as to how they would obtain the ball. Presently the debate became a hot argument during which each man challenged the other's ability to scale the building and obtain the ball. At this moment an elderly man came out of the doorway and, hearing the argument, offered $5 to the one who could scale the wall without help from ladders or ropes.

Spurred on by their own challenges and by the reward offered, each young man in turn wriggled and pulled and perspired, but the ball remained securely in its place, untouched. While these fruitless efforts were going on, the elderly man poked fun at the young men, telling them that they were "a bunch of weaklings and sissies" and reminding them that when he was a young fellow he could have scaled that wall in a jiffy.

Then came the turn of the last young man of the group, a dark-haired silent man who had been studying the face of the building. With the agility of a cat, he grabbed the side of the awning, whirled in the air, clutched a ledge and, giving a quick pull and a twist, reached the ball in less time than it requires to write about it.

"Say, young fellow, what's your name?" questioned the elderly man.

"Fairbanks," came the cheerful reply.

"Are you a professional acrobat for some show around town?"

"Of course not," laughed Fairbanks. "Physical feats are a hobby of mine."

The foregoing story was contained in a letter which I received from Douglas Fairbanks, famous movie star of such pictures as "Robin Hood" and many others. The story was written up in an article by Mark Larkin, entitled "Keeping Fit," which contains "Doug" Fairbanks' philosophy of keeping the body healthy.

"Doug" has developed a definite creed on how to keep fit. Here is some of his advice:

Mix your exercise with fun. You can get exercise out of everything you do, if you only do it the right way. If you walk into the library to get a book, you can make it a form of exercise, providing you carry yourself correctly and put some spring into your gait instead of dragging your feet along as if they were a couple of pontoons. Boys who are husky and healthy and strong get that way by romping over fences, climbing drain pipes and overcoming and surmounting similar obstacles. When I thought the thing all out shortly after completing my book education, I decided the best way to get health-building exercise was to imitate the kids. And that's what I have been doing all my life—just trying to be a kid.

To live long, to be successful, to accomplish any lasting good, a man must be at his best physically. Under the present so-called civilization it is difficult to be at one's best physically because of the high pressure of modern activity. And along with this we take life too seriously. We forget to play. If we try to remember that after all, men are but grown-up boys, life will probably come easier. And the easiest way to be a kid is to indulge in play.

When "Doug" Fairbanks was a boy he loved to play. As his mind matured and he grew to manhood, he realized that to keep healthy he must continue to play. How many of you have caught the spirit of play so valued by "Doug" Fairbanks? How many of you as you grow into manhood are going to forget all about play? "Being a kid" now in your play is easy; however, after you have reached maturity it is vastly more difficult to play.

Steering the ship of health for the right port requires that you chart your course thoughtfully. There are three points on the compass, three phases of life which, earnestly followed, will bring the ship of health to the port of successful living. These goals of living are physical strength, such as "Doug" Fairbanks would have you acquire, mental strength and moral strength. You must develop all three of these sides of your life to be a real man.

Illustrative of the mental side of life is the following incident:

It was a hot afternoon in a small town in Idaho. Two high school boys had just finished a friendly water fight and were lounging lazily on the roof of an old woodshed, drying their drenched clothing. Suddenly the bleating of sheep reached the boys' ears, and in the distance they saw a large flock approaching along the dusty road.

There came also to their ears the tinkling of a bell. The sound of this bell stirred them to action. They scrambled from the woodshed and grabbed an old broomstick. Then they waited eagerly for the sheep to pass by.

Several times on previous hot days they had been thrilled by a flock of sheep, and their thrill was equally great on this day, for when the sheep in the lead, a bell dangling at his neck, came on them, they mischievously ran out to the road and held the broomstick in front of the leader. The leader jumped over the stick, and the boys laughed merrily, for as the other sheep came to the spot where their leader had jumped, a majority of them also leaped into the air, although the boys had withdrawn the stick.

Such antics are characteristic of sheep; they would follow their leader over a cliff if he chose to take that route. They apparently do not possess as much as a speck of thinking power, of initiative. Indeed, though the comparison may seem crude, there are altogether too many boys who walk down the road of life jumping when a leader jumps, glad of a chance, it would seem, to allow another to furnish the brains.

All boys, of course, cannot be leaders, but all boys can display a much larger portion of brain power, of initiative than they ever dreamed they could. Brain power, mentality, is a second side of life that must be developed for a complete, healthy unit.

And now for the third side of your life—character. Participation in athletics gives one many illustrations of character, good and bad. Coach Eugene Nixon of Pomona College, Claremont, Calif., has given me permission to quote the following incident which he described in an article printed in the *Pomona College Magazine:*

"You're yellow—every blasted one of you—just plain cross-breed yellow—that's what's the matter with you. If any of you had the nerve of a jack rabbit you'd be two touchdowns ahead right now instead of seven points behind and you'd have that Whitefield fullback on a stretcher, halfway to the hospital. He has been going through you like soup through a horn—gained a hundred yards through your line and he hasn't even got a bloody nose. Regular old hound-dog yellow—that's what's the matter with you."

The orator was a high school football coach. He was berating his rather poorly trained team. His face was sickly saffron with rage, his voice thick with passion, his hands trembling with wrath. He was brow-beating a group of boys who should have been fine, upstanding young Americans—clean, alert, courageous, sportsmanlike. But they didn't look the part. As the coach raved and ranted, a sour, sullen, almost beastly expression came over their faces. By his unfounded incriminations the coach was arousing some of their deepest emotions, but none of their best. He was making them "mad." Convention kept them from murdering the coach, and it was easy to see the thought going through their minds.

As an illustration of a different type of influence from the one described above, allow me to repeat in substance the "before-the-game speech" of the head football coach at one of our finest American colleges.

He stood at ease as he faced his squad. He might have been a little pale under the deep tan, but his composure was admirable. His voice was pitched low, but every word cut deep. Probably no other speaker ever commanded closer attention.

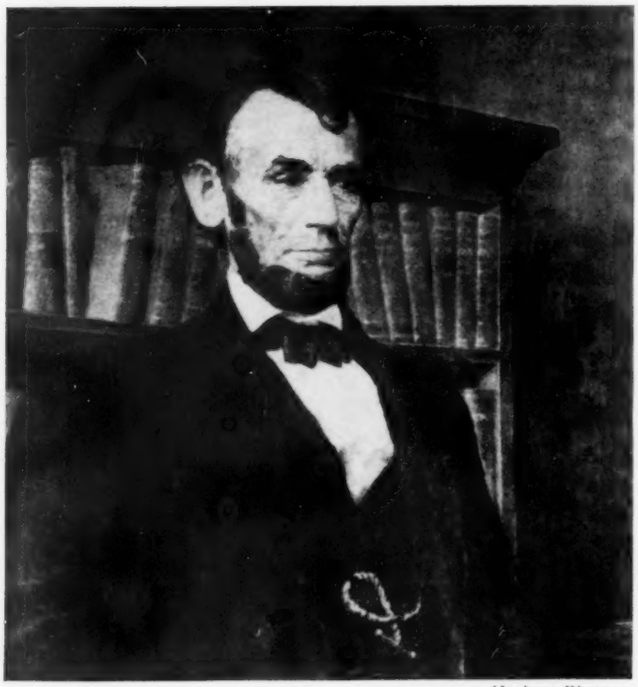
"Men, you have come to your final big game. For half of you it is the last of your college career. I have driven you hard for the past two months, and you have taken it like men. For that I thank you. I hope you have learned something from me—I know I've learned much from you. Now about the game. . . ."

He paused a moment and my mind flashed back to the coach raving and ranting as he tried to arouse the lowest savage instincts. What line would this coach take? What would he say to this group of the finest of America's young manhood? Would it be something lowering, coarsening, brutalizing? Well, this is what he said:

"Football is the greatest game in the world because, more than any other, it tries men's souls. Today you face a great test of your manhood. Should you live a hundred years you will still carry with you the memory of what you do on the field today. It is only

Wide World Photos

The soccer player develops great self control, for literally as well as figuratively he must use his head.



Herbert Photos

"I am bound to live up to what light I have."

relatively important that you be able to remember having won this game, but it is all-important that you be able to remember that on this occasion you were true to your teammates, to your College, and to your ideals."

The dull roar from the already frenzied stands drifted in through the training quarters windows, but the voice of the coach fell even lower—the silence in the room was more intense.

"To play the man, according to the code, you must do your duty on every play, and keep doing it in spite of all obstacles. You must forget personal glory—play for the sake of the team and the College. You must fight as men of this College are expected to fight—hard, clean, and to the last ditch. And above all, your sportsmanship must be above question. The reputation of this College for fine sportsmanship is worth a hundred victories."

But what was he going to say about winning the game? He was speaking again and this is what he said:

"About winning the game—I think you can do it, although the team you face today is stronger than our team. They have a better record. But part of the glory of being a man is the chance it gives to do the impossible. Men, I know you, and I believe every one of you will reach the heights today. Let's go."

The final "let's go" snapped out like the crack of a whip, bringing every man of the squad to his feet. There was no evidence of savagery in the faces of these young men as they grouped themselves silently about their captain and coach. The captain held out his hand:

"We won't fail you today, coach," was all he said. But what he meant was that his team would give their last ounce of energy to win, though, win or lose, they would play in such a spirit that afterward they could look each other, the coach, and the world in the eye without reproach. And it is worthy of mention that this team did win.

Of course, a team with such a training in sportsmanship would win, especially when it was playing against a team trained to play unfair. It might happen, though, that the two teams are equally well trained in right sportsmanship; and in such a case, while one team wins by securing the largest score, the other team wins, too—it wins a moral victory, the players' high ideals of sportsmanship not allowing them to stoop to unfair tactics. And because of this fact they come out of the game better men. They have learned how to build character.

So, as you travel through boyhood toward manhood, you should constantly seek to develop three sides of your life: the physical, the mental and the moral. You will have many chances to better yourself physically; playgrounds, gymnasiums and physical education programs are increasing in number each year.

Play. Enjoy the spirit of play. That is not hard for you now, but it will become much harder to do as the years slip away into manhood.

Overemphasis, though, on the exercising and enlarging of your muscles will not bring complete health or ideal manhood. The health of the muscles is so closely related to the health of the brain that the two cannot be separated. A clear-thinking brain helps to guide the muscles in their exercise, helps to keep the body from becoming a slave to habits that are enemies of health. Surprising as it may seem, the brain must have exercise just the same as the muscles. Mental gymnastics are as important as physical gymnastics.

In the early days of American football, coaches sought players possessing brawn—physical strength—players who had plenty of "beef" and knew how to use it. Today a coach is more often on the lookout for brains than he is for brawn. Football has developed into a game of strategy and individual wits, requiring as clear thinking as was ever exhibited in a classroom. Football, though, is not the only game in which brains are needed. To play any game expertly requires brains.

In the game of healthful living, as in an athletic game, it is just as important that you have a brain capable of thinking. Every boy at one time or another asks in a fretful manner, "What's the use of going to school anyway?" The answer is simple: "To learn to think."

Learning to think demands at the outset that you know how to study. Make a game out of your studies. Challenge the game spirit within yourself, resolving that you will not allow any lesson to "get your goat." Approaching a subject with that attitude, even though it is one which is difficult or seemingly impractical, will at least assure you tolerable success.

There are a few habits of thinking you should try to acquire. Endeavor to be interested in the lesson assigned, no matter how dull it may seem.

Remember that lessons are really mental gymnastics and your brain needs exercise as well as your muscles. Remember, too, that merely reading your lesson over is not studying it; you

must make the effort of concentrated study to give the brain a beneficial "gymnastic workout."

We are told that as a boy Theodore Roosevelt was not brilliant; he never possessed, according to his own opinion, other than ordinary mentality. But he worked hard; he studied hard. How he did work at his studies! Such application taught him how to concentrate. And there is the word, concentrate, that holds the secret of mental power. You may go to school for fifty years, but if you fail to learn how to concentrate, your schooling will be wasted time.

Learn to think! Only the boy who thinks can hope for health. Without thinking power you will never build your muscles or your brain; neither will you be able to attain the third side of your life—character.

One great man said that character is what a boy is in the dark. That is quite true. How you conduct yourself at home under the eyes of your parents or at school under the eyes of your teacher, is one test of character; but how you conduct yourself while on a hike with a group of boy friends is an entirely different test of character. While on a hike you are not being watched by grown-ups; you are on your own responsibility, and your actions when you are influenced by your own inclinations exhibit your real character.

Obedience is the heart of character, and boy and man alike must follow rules of conduct or lose their self respect. You drive your father's automobile down the highway by yourself. You observe that the speed limit is 40 miles an hour. Whether or not you keep the car within that limit depends on the strength of your character. You may argue, as so many do, that 10 or 15 miles more than the speed limit will never hurt any one; but when you so argue, and violate a law, you weaken your strength of character.

Abraham Lincoln was one who could never tamper with right. At one time he said, "I am bound to live up to what light I have. I must stand with anybody that stands right; stand with him while he is right and part with him when he goes wrong."

To acquire the kind of character that Lincoln emulated requires self control. Officers at the West Point Army Training School realize the worth of self control in character, and to increase this quality in the cadets they have the men play a lot of soccer football. There is a rule in soccer which prohibits the use of the hands. Being forced always to "head the ball" and play it with the feet instead of the hands requires real self control. Playing soccer teaches the cadets at West Point to control a natural desire, but by so doing they become better soldiers, better men.

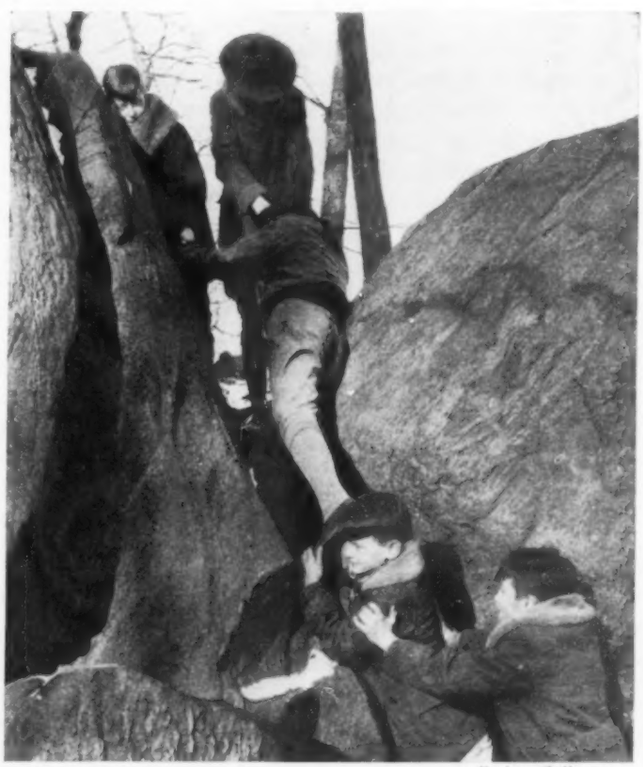
Being reliable is as essential to character as self control. You make a school athletic team and are asked to keep in training. The fact that the coach has picked you for the team shows that he feels you are reliable and will follow the training rules. The same type of reliability is continually being sought after by employers of boys, who ask "Is he reliable? Can he be trusted?"

Bigness of character will help you to obtain health; it will help you to make a success of your life; it will help you to get along with your friends, young and old. Yes, your goal in character building should be largeness of character.

Stanton called Abraham Lincoln "a low, cunning clown" and nicknamed him "the original gorilla." Lincoln heard these stinging abuses, but nevertheless he appointed Stanton as Secretary of War. Years later in a room across the street from Ford's theater, Stanton standing by the bedside of the martyred President said, "There lies the greatest ruler of men the world has ever seen." Lincoln was firm in his belief that personal resentment did not pay, and his largeness of character influenced all who dealt with him.

Here, then, is the road you will have to travel if you would have health: Take the first turn to the right, where the sign reads: "Build yourself physically"; at the second sign you will find these words: "Build a keen mind"; and a third sign reads: "Build a noble character." You may submit to your desires; you may try a by-path, but hundreds of boys today are finding that all three of these signs must be passed to reach the destination—health and manhood.

(To be continued)

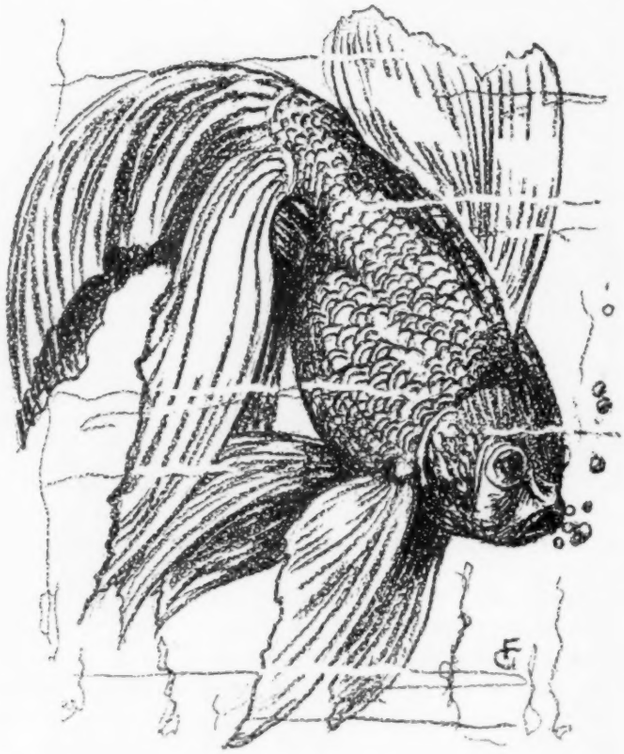


Ewing Galloway

"Character is what a boy is in the dark"—or on a hike with boy friends unsupervised by elders.

FORTY YEARS OLD OR —

Life Expectancy



IN APPROACHING the problem of arteriosclerosis the student today is in a position similar to that of the mathematician who, facing a problem, finds in his equations so many unknowns that a solution is not possible.

What is the cause of human arteriosclerosis and what factors influence its progress? To these admittedly important questions there is no answer at the present time, and without facts one is forced to speculate. It is not my purpose to review at length the present-day conceptions of the causes of human arteriosclerosis. Only a few years ago, in a critical review of this subject an eminent authority said, "Arteriosclerosis is one of those conditions difficult to explain because it develops so slowly through long years of life during which a great many possible causes have had an opportunity to affect the tissues. Hence every conceivable idea has been expressed and many of them are so vague and ill supported that it is wearisome to discuss them." Appreciating the truth expressed in this quotation, nevertheless one finds it difficult to dismiss summarily from consideration certain factors that have long been regarded as significant to the cause of arteriosclerosis. To know some of these alleged factors is to appreciate the difficulties they present to the student of the problem of arteriosclerosis.

Like other structures in the human body, the circulatory apparatus has developed through millions of years from a simple form seen in lower animals to the elaborate one in the higher forms and in man. The structural unit in every form of life, animal or plant, is the cell, which is microscopic in size but endowed with all the properties of living matter. Thus it is that an organism such as the ameba, with only one cell, is able to move, feed its body, flee from its enemies and reproduce its kind.

Such simple forms of life appeared and have ever remained in the water, from which they extract their nourishment and into which they pour waste products. Going a little farther along in complexity one meets a multicellular organism, still a lowly member of society but one whose body contains, for example, a hundred cells instead of one cell. Here one finds a row of cells on the outside of the animal's body in direct contact with the environment, water; but there are many on the inside for which some arrangement must be made to bring water to them. Serving this function are tiny channels running from the periphery to the interior. Thus evolves the beginning of a primitive circulation supplying the animal cells on the inside of the body. Going to a still more complex form of life composed of millions of cells, one finds, of course, a more complex architecture. Specialization has developed. A group of cells is set apart to perform a special function, and this group of structures is called an organ. The life of the animal is now much more complicated and depends on the harmonious working of the various organs, which in turn are dependent on the individual cells composing the organs. These cells must be bathed in liquid, as was the primitive ameba.

Food and oxygen also must be brought to them, and their waste products must be removed. An elaborate meshwork of channels runs through the animal's body, and these channels are the forerunners of the blood vessels. Proceeding to a still more complex form of life, the system of vessels is now so elaborate that fluid will no longer circulate freely. There must be a pump to keep it going. A small section of a vessel begins to contract rhythmically. Later, in higher forms of life, this section becomes more active and soon the primitive heart appears. The circulatory apparatus had developed to this point before any

FORTY YEARS YOUNG?

and the Diseases of Middle Age: II

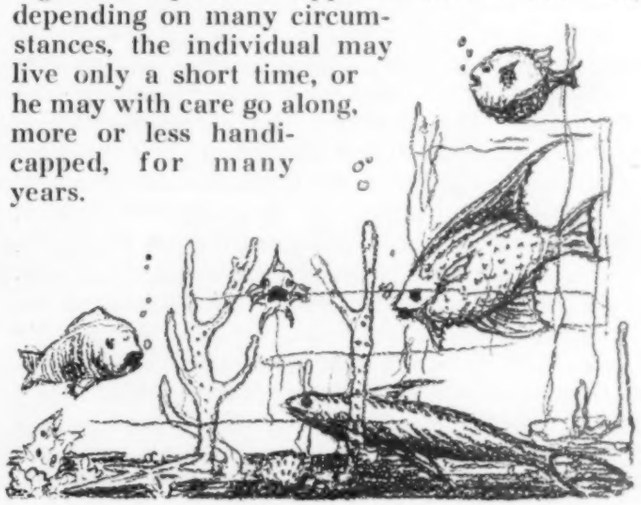
By R. W. SCOTT

living form had ventured to try his luck on the land. Nature had already been at work in her laboratory in the primordial seas for more than 500 million years, a period estimated to be more than half of the earth's life span up to the present.

Scientists are generally agreed that life began in the seas, as this was the only environment affording a sufficient constancy to permit the development of living forms. As animals increased in complexity, the circulation of sea water no longer sufficed for the needs of the body cells, and there appeared a fluid manufactured by the body itself, which is called blood. In some of its fundamental properties the similarity of this fluid, even in man, to deep sea water seems to many persons to be more than a coincidence and suggests that blood as a circulating medium of exchange appeared in that remote past in which all animal life was still in the seas.

The human body is constructed of billions of cells, highly specialized into many organs, cooperating one with the other, subject to and obeying orders from the superintendent and general manager of the plant, the nervous system. The individual cells in the body, like all other living cells, must be bathed in liquid; hence more than 60 per cent of the body weight is water. The fluid surrounding the cells, known as lymph, must have delivered to it food and oxygen, and the waste products of the cellular activity must be removed. This is accomplished by the circulation of the blood.

Body cells are microscopic structures. In order that the blood may be brought into contact with them, it must ultimately run into microscopic channels, known as capillaries, whose walls are so thin that food and oxygen may seep through into the fluid surrounding the cell; waste products and carbon dioxide may in turn enter the capillary and be carried away. The function of the circulatory apparatus then is to maintain a steady flow of blood through the microscopic capillaries where, as some one has said, the real business of life takes place. The heart is the pump; the larger arteries that one feels and sees are the mains or conduits conveying blood from the central pumping station out to the arterioles and capillaries where it can be used. So long as blood is in the large arteries it cannot be used, any more than one can use water in the main until it appears at the faucet. The billions of capillaries through which the blood must flow offer a distinct resistance; and to overcome this, one must have a certain pressure in the larger arteries. This pressure is known as blood pressure. Falling below a certain critical level, the circulation in the capillaries is retarded and the cells suffer, some more than others. It is interesting to note that those cells that have been acquired last in evolution, the highest brain centers, are the most vulnerable to retardation in blood flow. Thus any transient lowering in blood pressure causes these cells to cease functioning temporarily, and one has then an ordinary fainting attack in an otherwise normal individual. The lower brain centers controlling the respiration and heart beat are much older and are not so easily affected by an ephemeral drop in blood pressure; otherwise an ordinary fainting attack would be fatal. It is clear then that the chief resistance to the flow of blood occurs in the smallest arteries and capillaries, which act as so many nozzles at the end of the stream. Any abnormal narrowing in the caliber of these vessels demands a higher pressure head in the mains. Thus one finds a persistent elevation of blood pressure commonly associated with arteriosclerosis of the smaller vessels. This process may even occur in young people in the second or third decades of life and run a rapid course to death. More commonly, however, high blood pressure appears later in life and, depending on many circumstances, the individual may live only a short time, or he may with care go along, more or less handicapped, for many years.

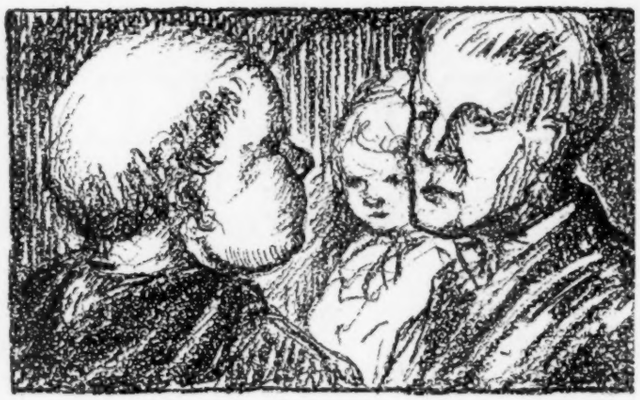


The fact that the blood in the arteries is normally under considerable pressure was discovered by a clergyman, the Rev. Stephen Hales, a priest of the Church of England, who was more interested in natural phenomena than in theological controversies. For this reason he was not so well known in the church as was his contemporary, John Wesley; but through succeeding generations having an increasing respect for men of science, his fame has grown.

Although Hales made his discovery in 1733, by placing a glass tube in the artery of a horse, it was nearly two centuries later, in 1896, that an accurate and practical instrument for determining the blood pressure in man was perfected. In a few years a blood pressure apparatus appeared in every up-to-date physician's office, and determinations of the patient's blood pressure became a routine part of a physical examination. It was found that some people had a pressure too low and others too high, and in a short time there were two new diseases, high blood pressure and low blood pressure. Patients were told of their pressures, and soon a multitude of new invalids appeared in the land. There were those who before their pressure was taken were doing well, who subsequently became ill worrying over their new disease. For thirty-five years, blood pressures have been taken and for the same length of time an attempt has been made to solve the problem of high blood pressure, but much remains to be learned. A few facts, however, are gradually coming to light. It is known that blood pressure may be an unstable phenomenon in some people and that it is profoundly influenced by the nervous system. Worry, loss of sleep and emotion may be responsible for many points in an elevated blood pressure, which will often fall as these factors are controlled. Too frequently this drop in pressure is ascribed to some special diet or to some specific medicine, whereas the real agent is a simple sedative, insuring a few good nights' sleep, a pleasant vacation or a rise in the stock market.

Is Your Blood Pressure a Market Barometer?

Indeed, in the past two years, particularly, fluctuations in blood pressure in some persons have been determined more by movements in the market than by diet and medicine. Much importance is attached to diet in the management of high blood pressure, and often the first advice given the patient is to avoid protein, particularly in the form of red meat. Except in obese individuals, who, as some one has said, dig their graves with their teeth by eating not only too much meat but too much of everything else, there is no sound evidence to show that diet alone has any influence on the blood pressure. It is a well established fact, however, that a loss of several pounds by dietary restrictions in an overweight person with high blood pressure is often attended by an appreciable drop in pressure.



Many patients, particularly those beyond 50, do better with an elevated pressure than with a perfectly normal pressure. To the informed physician, an abnormal blood pressure, high or low, is no more a disease than fever is a disease or than an alteration in metabolism is a disease. It is the reaction of the body to some disturbance in the normal physiologic reactions. The nature of this disturbance and the factors that influence it constitute a problem which the physician must study in order to give his patient intelligent counsel.

The Types That Make the World Go Round

A certain constitutional type of individual, long known as the apoplectic and called by the modern psychiatrist the syntonic, is more often subject to high blood pressure. Persons of this type are inclined to be thick-set and rotund, and their waist-line usually increases with age. They are hearty looking fellows, great handshakers and back slappers, optimistic and forward looking, who enjoy and are usually the life of a party. With the slogan "tell 'em and sell 'em" they make good high pressure salesmen of almost anything from real estate to silk underwear. From this group are recruited many good politicians and "Babbits" who are frequently not so interested in uplifting as they are in the philosophy of "live and let live." In contrast, there are persons of the schizoid type, who rarely suffer from high blood pressure. These are the thin-chested, dyspeptic, sedentary people who become lean, frail and pale as they get older, but who often survive to old age. In this group one finds many good pedagogues, scientists, some uplifters and a few theologians. In looking over one's acquaintances, how easy it is to find members of these two types. Long before blood pressure was ever heard of, they were known by both historians and dramatists. Shakespeare was well aware of them. In Hamlet he portrayed the schizoid and in Falstaff the syntonic. In many patients, as previously mentioned, one finds a persistent elevation of blood pressure associated with deterioration of the arteries, particularly of the smaller vessels; and

looking into the family history in such cases one finds a high incidence of vascular decay. This forces one, as it has many physicians in the past, to a consideration of the question of heritage.

Both experience and that refined form of it which is termed statistics indicate that the surest guarantee of a long life is longevity in one's ancestors. Inheritance, in other words, appears as the most important factor, if not the dominating one in determining the life span. Since the life span is now dependent largely on the wearing quality of the arteries, to inherit good arteries is to live long. As the late Sir William Osler remarked, "Much depends on the quality of arterial tissue (vital rubber) which the individual has inherited." According to this view some persons enter life with a good machine and others with a poor one. For the first few thousand miles one may have little trouble. The youth in a rattle-trap may roll along as merrily as the youth in an expensive car; but as age approaches, as the mileage on the speedometer mounts, one finds oneself increasingly dependent on the wearing quality of the machine.

Modern Science—Protector of Human Machinery

Just as a good car improperly cared for may not perform as long as a cheap one in the hands of a good driver, so it is with the human machine. With the great advance made in medical science a good deal has been learned about the human machine. From physiology and biochemistry one learns about its complexities and the delicate adjustments at work to keep it in good running order. From bacteriology, hygiene and sanitation one learns to protect it against wrecks on the open road. As a result, there are more people maturing and reaching the age of 40 or 50 today than ever before. But, having attained this age, why are an increasing number showing up with shoddy in the vital parts? In spite of all the knowledge and care, why will the machines not run longer? There are those who maintain that man is driving more recklessly today than formerly; that he is living faster. Before drawing any dogmatic conclusions on this point, however, it will be well to examine another probability; namely, that more people today are starting life with inferior stock in their vital parts. As new machines protected by modern science, the parts survive to maturity; but as age comes on, the shoddy appears in the form of early deterioration and degeneration of the blood vessels.

So far as the race is concerned, one sees inferiority more and more placed at a premium. One of the rules is to make every provision to shelter the physical and mental defectives so that they may propagate their kind. Millions of taxes are spent annually for the maintenance of institutions for the feebleminded, correction homes, epileptic colonies, reformatories and penitentiaries, and every year a new movement is started or a new philanthropy is established, endowed with millions, to save human life in one way or another.

Inferiority Breeds Racial Deterioration

There is, of course, no sane human being who will advocate the abandonment of those poor unfortunates who are forced into life with an inferior mental or physical equipment, because man with all his ideals, his noble instincts and his human brain has as yet discovered no way successfully to thwart Nature without paying the penalty. Is it not wisdom as well as charity to remember that after all man has a biologic aspect—that to allow the blind reproduction of inferiority must lead to racial deterioration, both mental and physical? To permit this, one may say, is only human, but how easily one can revert and demonstrate animal instincts. On one of these occasions, still fresh in memory, a racial experiment was performed on a grand scale by butchering 10 million men, the flower of the stock. Such are the rules of that game. Mother Nature smiles slyly as she has for ages, but how long is man going to disregard her ace in the hole? If heredity is an important factor in determining the quality of the arteries, should we be surprised that they are not wearing so well as those of our forefathers? I leave the solution of this aspect of the problem to those who are able to foresee the time when man is forced by necessity to heed the lessons not only of his own history but of that of all other living forms on the globe.

To recapitulate, I may say that deterioration of the blood vessels beyond 40, leading to death from heart disease, is now the greatest barrier to longevity. Adding that great number of individuals who, because of arterial changes, die of

(Continued on page 181)

FOODS -- Their Selection and Preparation

MENU MAKING

By

E. M. Geraghty

SO MANY persons say to me, "I wish I knew more about menu making and food values; I'd like to be sure I'm feeding my family right. My food bills are high, but I'm not sure I'm spending my money wisely."

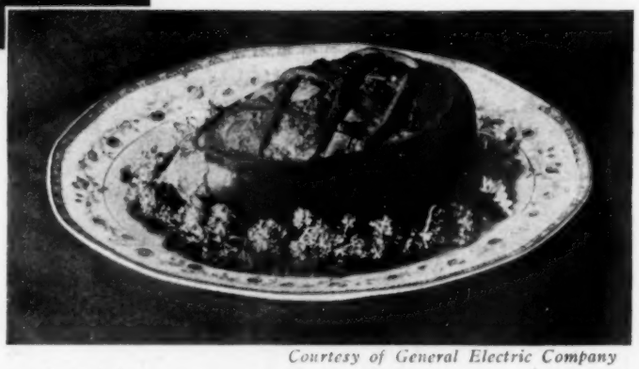
Farina and raisins will help to start the day right and stuffed eggplant to end it in the same fashion.

It is not possible in a brief space to make an exhaustive or a comprehensive survey of all the market offerings, and this is not necessary since foods are readily grouped and members of each group may be suitably interchanged. Moreover, it is not desirable to plan menus of great originality and exotic appeal, because the most rational dietary regimen is the close approach to simplicity of selection, safety in storage, skill and care in preparation and daintiness in service.

Since the adequate diet for the well adult is the goal at which to aim in menu making, I shall outline here the requirements and salient features:

1. There should be balance in protein, fat and carbohydrate.
2. There should be sufficient complete protein for growth and maintenance of the body.
3. There should be 1 pint of milk daily for each adult and 1 quart daily for each child.
4. There should be sufficient bulk or residue-producing matter to insure normal bowel action.
5. The necessary minerals and vitamins should be included.
6. There should be sufficient calories to maintain correct body weight.
7. There should be plenty of water.
8. There should be an interesting variety of food and a presentation in such a way as to stimulate appetite; at the same time the diet should consider the food likes and dislikes of individuals and the economic status of the family.

The commonly accepted ratio for the balance is from 10 to 15 per cent of the calories from protein, including animal protein; from 35 to 40 per cent of the calories from fat, and 50 per cent of the calories from carbohydrate.



Courtesy of General Electric Company

While the protein requirement is usually based on the actual amount of protein needed to keep the body in nitrogen equilibrium, yet the usual allowance for a margin of safety brings

TABLE 1.—*Protein Yield of Various Foods*

Food	Amount*	Protein, Gm.
Beverages		
Whole milk	6 oz.	6
Skimmed milk	6 oz.	6
Buttermilk	6 oz.	5
Evaporated milk	6 oz.	12
Soups (canned—diluted as directed)		
Asparagus	6 oz.	2
Bean	6 oz.	11
Beef	6 oz.	10
Bouillon	6 oz.	5
Celery	6 oz.	3
Chicken	6 oz.	3
Chicken gumbo	6 oz.	7
Clam chowder	6 oz.	7
Consommé	6 oz.	6
Julienne	6 oz.	5
Mock turtle	6 oz.	11
Mulligatawny	6 oz.	5
Mutton	6 oz.	9
Oxtail	6 oz.	7
Pepperpot	6 oz.	8
Printanier	6 oz.	8
Pea	6 oz.	9
Tomato	6 oz.	3
Vegetable	6 oz.	6
Home made cream	6 oz.	6 to 10
Split pea	6 oz.	19
Fish		
Codfish	2 by 2 by ¾ in.	5
Haddock	2 by 2 by ¾ in.	5
Halibut	2 by 2 by ¾ in.	6
Salmon	2 T.	7
Sardines	4 small	7
Tuna	2 T.	7
Clams	6	9
Crab meat	¼ cup	7
Lobster meat	¼ cup	8
Oysters	7 medium	6
Shrimp	12	15

Food	Amount	Protein, Gm.
Vegetables (fresh)	Average serving	1 to 4
Fruits	Average serving	1 to 2
Meats		
Roast beef	Average serving	12
Tenderloin steak	Average serving	17
Bacon	3 strips 5 in. long	5
Corned beef	Average serving	9
Dried beef	Average serving	6
Lamb chop	1 chop	14
Mutton chop	¾ in. thick	19
Pork chop (lean)	Average serving	31
Veal chop	Average serving	24
Fowl	3 by 3 by ¼ in.	6
Frankfurter	Average serving	8
Ham (boiled)	4 by 3 by ¼ in.	10
Beef liver	4 by 3¼ by ⅜ in.	16
Calves liver	4 by 3¼ by ⅜ in.	16
Chicken liver	Average size	12
Pork roast	2½ by 2 by ¾ in.	13
Pork tenderloin	4 by 3½ by ¼ in.	19
Round steak	2 by 1 by 1 in.	13
Desserts		
Gelatin cream desserts	Average serving	7 to 10
Corn starch puddings with egg	Average serving	7 to 10
Rice tapioca with egg	Average serving	8 to 11
Fruit gelatins	Average serving	4
Ice cream	Average serving	3 to 7
Cheese		
American	1 cubic inch	6
Cottage, dry	2 T.	6
Cream, philadelphia	½ cake	2
Limberger	1 cubic inch	5
Roquefort	1 cubic inch	5
Swiss	1 cubic inch	6
Pimento	2 T.	4 to 7
Miscellaneous		
Breads	Average slice	3
Egg	1	6
Cereals	Average serving	1 to 4

* In the tables, t. indicates teaspoonful; T. indicates tablespoonful.

the daily allowance to about 1 Gm. for each kilogram, which is equal to 2.2 pounds of body weight; the formula for a man of 154 pounds would be $154 \div 2.2 =$ 70 Kg., or 70 Gm. of protein.

The sources of protein are meat, egg, cheese and fish. Table 1 shows the grams of protein yielded by an average serving of these foods.

One factor to be kept always in mind is that protein is usually an expensive food, and it is not economical to take more than the amount that is required.

Most of all, watch the fat! Many persons take entirely too much of cream, butter and other fats.

Vegetables, rich in food values, may please the eye. The center picture shows a tempting arrangement of carrots, cauliflower and asparagus. Above are shown stuffed green peppers and below a vegetable plate.

Considering an average caloric requirement as 2,800 calories, divide this up among protein, fat and carbohydrate. Ten per cent would be 280 calories from protein; 40 per cent would be 1,120 calories from fat; 50 per cent would be 1,400 calories from carbohydrate. One gram of protein and 1 Gm. of carbohydrate each yield 4 calories, and 1 Gm. of fat yields 9 calories. Dividing the 280 calories from protein by 4, one gets 70, or the number of grams of proteins allowed. Dividing the 1,120 calories from fat by 9, one gets 124, or the number of grams of fat allowed. Dividing the 1,400 calories from carbohydrate by 4, one gets 350, or the number of grams of carbohydrate. This gives an allowance of 70 Gm. of protein, 124 Gm. of fat and 350 Gm. of carbohydrate. Table 2 shows this allotment.

TABLE 2.—*Caloric Yield of Various Foods*

Meal	Amount	Protein, Gm.	Fat, Gm.	Carbohydrates, Gm.	Calories
Breakfast					
Stewed prunes	6	2	..	34	144
Sugar	2 t.	..	..	10	40
Farina	½ cupful	2	..	14	64
Sugar	2 t.	..	..	10	40
Whole milk	¼ cupful	2	2.5	3	43
Soft egg	1	6	6	..	75
Butter	1 t.	..	4	..	36
Toast	1 slice	3	..	16	78
Butter	1 t.	..	4	..	36
Coffee					
Cream	1½ T.	7	4.5	0.7	46
Sugar	2 t.	..	..	10	40
Milk	6 oz.	6	7.5	9	128
Luncheon					
Vegetable soup	Av. serving	1	11	9	139
Crackers	2	2	2	10	66
Crisp bacon	3 strips 5 in. long	5	11	..	119
Fruit salad	Av. serving	..	15	16	199
Entire wheat bread	1 slice	..	..	14	64
Butter	1 t.	..	4	..	36
Milk	6 oz.	6	7.5	9	128
Caramel pudding	Av. serving	3	3	52	247
Sugar	1 t.	..	..	5	20
Milk	¼ cup	2	2.5	3	43
Dinner					
Chilled tomato juice	3 oz.	..	..	3	12
Broiled steak	3½ by 3 by ¾ in.	17	25	..	293
Stuffed baked potato	Av. size	5	2	28	150
Squash	Av. serving	2	4	10	84
String beans	Av. serving	1	4	3	52
Hard roll	1	3	..	16	76
Butter	1 t.	..	4	..	36
Cucumber and radish salad	Av. serving	1	..	4	20
Orange ice	Av. serving	..	..	66	264
Black coffee					
		71.7	123.5	354.7	2,818

Courtesy of General Electric Company

Courtesy of General Electric Company

Fruit cocktails should be served properly chilled.

If, however, one chooses to use the ratio of 15 per cent of the calories from protein (for 1.5 Gm. per kilogram of body weight), then one will have 35 per cent of the calories from fat and 50 per cent of the calories from carbohydrate. From a requirement of 2,800 calories one would find that the 15 per cent ratio gives 420 calories from protein; 35 per cent would be 980 calories from fat and 50 per cent would be 1,400 calories from carbohydrate. Dividing the 420 calories from protein by 4, one gets 105, or the number of grams of protein needed. Dividing the 980 calories from fat by 9, one gets 109, or the number of grams of fat needed. Dividing the 1,400 calories from carbohydrate by 4, one gets 350, or the number of grams of carbohydrate needed. This gives an allowance of 105 Gm. of protein, 109 Gm. of fat and 350 Gm. of carbohydrate.

The individual working out of any dietary regimen considers the likes of the person for whom the diet was planned and at the same time adheres to the basic allowance and requirements for good nutrition. Some persons want a large quantity of butter with their vegetable and on their bread but are perfectly willing to take whole milk with their cereal and puddings. Others want less cream in their coffee. The total fat content and vitamin A content will be the same, but they will be distributed differently throughout the day. In much the same manner one will find differences of distribution among fruits and vegetables. Some persons will prefer more fruit and fewer vegetables. Many will use less sugar than is noted in the menu given to illustrate a distribution of 70 Gm. of protein, 124 Gm. of fat and 350 Gm. of carbohydrate. I shall therefore use the same basic menu and bring in variations and also provide more protein, less fat and approximately the same amount of carbohydrate. Table 3 shows how this plan may be worked out.

The pint of milk a day for each adult and a quart a day for each child may need some skilful measuring to assure its consumption. However, there are so many ways to use it, such as in soups, beverages, puddings and sauces, that it may be done without being objectionable. Since the main reason for the inclusion of this amount of milk in the diet is the calcium contribution, any form of milk providing the same amount of calcium as the required pint or quart will answer every purpose. When it seems desirable to get the calcium from as little bulk as possible, it is an excellent idea to use evaporated milk.

Bulk may be obtained from fruits and vegetables and from the coarser cereals and breads.

With an average correct diet, all mineral requirements will be met except the greater needs of calcium, phosphorus, iron and iodine. The daily requirement of calcium is 0.68 Gm. Children and pregnant and nursing women need as much as 1 Gm. daily. The best source of calcium is milk. Other good sources are cheese, eggs, vegetables and fruits.

Phosphorus, of which 1.32 Gm. is needed daily, is found in meat, fish, eggs, milk, whole grain cereals, fresh fruits and vegetables.

The iron requirement, which is 0.015 Gm. daily, may be derived from meat, beef or liver, eggs, oysters, whole grain cereals, fruits and vegetables.

For iodine, sea foods and iodized salt should be included.

For vitamin A, include butter, whole milk, eggs, cheese and certain fruits and vegetables. For vitamin B, include fresh fruits and vegetables, meat, milk and whole grain cereals. For

TABLE 3.—*Distribution of Protein, Fat and Carbohydrate*

Meal	Amount	Gm. or Ce.	Protein, Gm.	Fat, Gm.	Carbohydrate, Gm.	Calories
Breakfast						
Stewed prunes	6 t.		2	..	34	144
Cream of wheat	½ cupful (20 Gm. dry)		2	..	14	64
Sugar	2 t.	10	..	..	10	40
Cream	¼ cupful	60	2	12	2	124
Soft eggs	2	100	13.4	10.5	..	150
Toast	1 slice	30	3	..	16	78
Butter	½ t.	2½	..	2	..	18
Coffee						
Cream	1 T.		0.5	3	5	31
Sugar	2 T.	10	..	..	10	40
Milk	6 oz	180	6	7.5	9	128
Luncheon						
Cream of corn soup	Av. serving		5	9.5	18	178
Crackers	2	14	2	2	10	66
Crisp bacon	3 strips 5 in. long	23	4.5	7.5	..	86
Fruit salad without dressing	Av. serving		..	..	16	64
Entire wheat bread	1 slice	30	2	..	14	64
Butter	1½ T.	2½	..	2	..	18
Milk	6 oz.	180	6	7.5	9	128
Prune custard	1		8	7	56	316
Dinner						
Chilled tomato juice	3 oz.	90	..	..	3	12
Roast chicken		120	24	20	..	268
Stuffed baked potato	1		5	2	28	150
Squash (½ teaspoonful butter)	Av. serving		2	2	10	66
String beans (½ teaspoonful butter)	Av. serving		1	2	3	34
Hard roll		30	3	..	16	76
Butter	½ t.	2½	..	2	..	18
Cucumber and radish salad	Av. serving		1	..	4	20
Orange ice	Av. serving		..	..	66	264
Black coffee						
Crackers	2	14	2	2	10	66
American cheese	1 cubic in.	20	6	7	..	87
			100.4	107.5	358.5	2,798

vitamin C, include fresh fruits and vegetables, especially citrus fruits, tomatoes, raw cabbage and lettuce. Vitamin D is provided in cod liver oil, whole milk, eggs, butter and liver. For vitamin E, choose lettuce and entire wheat. After the foregoing factors have been met, the caloric needs may be filled in by whatever foods appeal to the individual and yet do not disturb the ratio of the diet.

Menus to meet dietary needs may be made up according to the following outlines:

Breakfast.—Fruit—fresh, dried or cooked; cereal with milk, sugar if desired; bacon or ham, occasionally; egg; toast, muffins or rolls; hot beverages with cream or evaporated milk; glass of milk.

Luncheon or Supper.—Soup, preferably cream or thick vegetable; cheese, egg or some made up dish; substantial vegetable or fruit salad; bread or rolls and butter; well chilled fruit, soft pudding or custard; milk.

Dinner.—Thin soup, bouillon or consommé or fruit cocktail or tempting appetizer; relish; meat or fish; potatoes; two vegetables or a generous amount of one vegetable; rolls or bread and butter; crisp, cool, light salad; simple, well chilled dessert; crackers; cheese; hot black coffee or decaffeinated coffee.

Menu planning affords excellent opportunities for the use of skill and artistry in achieving good nutrition, maintaining variety and sustaining the interest of those for whom the menus are planned. All this must be done within the allotted budget whether in home or in institutions.

Because breakfasts are much alike anyway except for variety in fruits and cereals, it is best to make the menus for these first. Because dinners are more limited in possibilities and must maintain a certain dignity, one should plan the dinners next. Because of the flexibility of offerings suitable for luncheon and supper and because it is easier to make adjustments to escape repeating flavors and items, plan luncheons and suppers last.

Some recommendations concerning food combinations and menu details are suggested here to avoid serving foods alike in flavor, color, shape or food value at the same meal.

1. Keep in mind such points as texture, flavor and colors. Shape also is a factor. Do not use small potato balls and small white onions at the same meal. Do not serve tomato soup and tomato salad at the same meal or cream of celery soup at luncheon and then celery salad. Do not have carrots and yellow turnips or either of these with sweet potatoes. As for color, think of the meals as a whole. Do not use two "strong flavored" vegetables, as cabbage and onions or turnips and brussels sprouts; worst of all would be cauliflower and brussels sprouts or cabbage salad.

2. Watch for types of carbohydrates. Do not have rice and macaroni, rice and potatoes, or macaroni and potatoes together, and do not serve white potatoes and sweet potatoes at the same meal.

3. Do not have a cream soup and a creamed vegetable or other dish or dessert made with milk as menu items at the same meal. Do not prepare a fruit cocktail to start a meal if fruit salad or fruit gelatin is coming later.

4. Creamed vegetables are best served at luncheon. They do not belong at dinner.

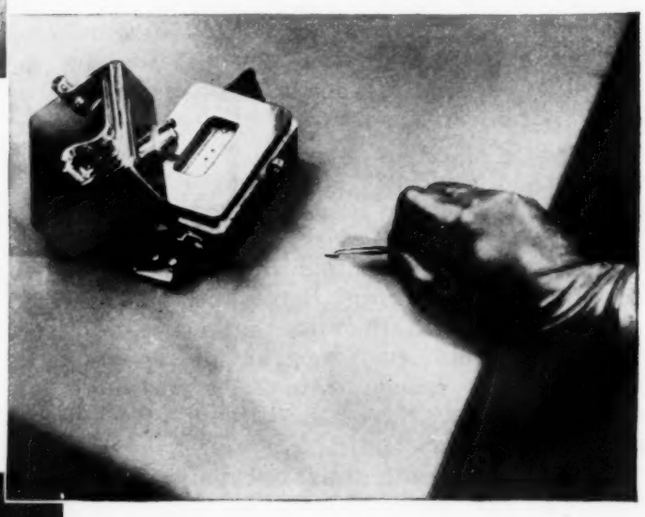
5. Keep menus seasonal. Serve the heavy foods in winter, lightened and cheered by crisp, cool salads, desserts and fruits. In summer, keep to the safe borderline of at least one hot dish each meal, but by adventuring with color and flavor, entice lagging appetites. Above all, have cool things cool. In the days ahead, when whatever ships I may have adventuring come to port, I am going to begin and end every luncheon and dinner with a cold offering. (There is another reason for the cold dessert at dinner—it is a fine forerunner of the hot, black, clear beverage with or without its caffeine.)

6. Make and keep the individual offerings excellent in every detail. Too often one is served limp cocktails of lukewarm canned pears, peaches and other bland fruits, swimming in a slightly sweetened thick syrup and topped by a tired looking maraschino cherry. When planning a fruit cocktail, designate fresh fruits, oranges, grapefruit, apple, melon, white peaches and firm grapes, and use a slightly tart rather than a sweet sauce. Top the concoction off with a sprig of mint, a bit of candied ginger or some other bit of individuality. And chill it!

RADIUM
demands the most careful handling

Even with a mask, the radium technician is protected for only a certain time against the emanations of radium. The garments are made of gum stuff, combined with lead.

In order to be capable of working a longer time with radium, laboratory workers must be protected by lead plates 15 centimeters thick, as shown in this picture.



Radium, even in the factories where it is prepared for shipment, has to be carried about in comparatively large transport safes.

Packing radium involves arithmetic problems. One tenth of 15 grains of radium must be packed into 23 kilograms of lead to make a package which is 25 kilograms in weight.

Keystone-Underwood

The Radiologist

An Invaluable Middleman Between Surgeon and Patient

By L. J. MENVILLE

A RADIOLOGIST is a physician whose specialty is restricted to the use of the x-rays and radium in the diagnosis and treatment of disease. In the practice of medicine he occupies a position identical with that of other specialists engaged in the various fields or branches of medicine.

The public, in greater part, has apparently been misinformed regarding the manner in which the x-rays are applied in making a diagnosis. Because an x-ray apparatus is a mechanical contrivance, many persons believe that it is necessary for the operator merely to press a button and presto! out comes an x-ray film on which is printed the diagnosis of the existent disease. Such an erroneous conception of the use of the x-rays explains why so many persons fail to understand that an examination of this character must be conducted by a radiologist. If such a fallacious understanding is left uncorrected, serious consequences to patients will continue to exist. It therefore becomes the duty of the radiologic profession to explain clearly the reasons why the public should exercise every precaution against the dangers of the x-rays when they are used by persons who are not radiologists.

Medical History in the Making

The public has not forgotten the time when epidemics, such as the bubonic plague and yellow fever, were of frequent occurrence in this country. These epidemics and their attendant dangers caused considerable anxiety and worry, and they were usually followed by a tremendous financial loss. The medical profession was the only source to which the layman at that time could go for advice and treatment. The manner in which the profession responded is now medical history.

At the present time the people of this country are in need of the advice and protection of the radiologic profession against certain dangers which confront them when subjected to the x-rays by incompetent and careless individuals. A mere warning to the public is not convincing enough. Valid reasons based on experience must be submitted in a simple but forceful manner, so that any one can readily understand why so many accidents occur as the result of erroneous diagnoses.

Underwood and Underwood

The radiologist must apply his knowledge of anatomy, physiology, pathology and medicine to arrive at a correct diagnosis.

An x-ray film from which the radiologist makes a diagnosis is purely the result of some mechanical and technical work. It does not involve any medical knowledge. It represents a type of work that can be done by a technician who has had some experience in operating an x-ray apparatus and also in developing x-ray films. The work which the technician performs is of value from a technical standpoint.

Where the Technician's Work Ends

After an x-ray film is developed, the work of the technician terminates. From this point on, the medical phase enters into the examination. It must be appreciated that the art of interpreting an x-ray film and a fluoroscopic examination requires a knowledge of medicine and years of experience. An interpretation of an x-ray film by a nonmedical person, however, is not made by the application of medical knowledge but

results rather from noting the resemblance of the film in question to one previously observed which represented a certain condition. These deductions are at best empiric and void of any scientific medical analysis. It is not difficult, therefore, to appreciate the limitation of a nonmedical person in the field of radiology and to understand why it is possible for him to render erroneous diagnoses.

The Radiologist Must Be Master of Many Fields

It can be understood readily why instances have been reported in which an eye was removed needlessly as a result of a failure to localize a foreign body or a limb was amputated after a diagnosis of malignant tumor, which was proved later to be an innocent tumor. Then, again, cases have been reported in which diagnosis of cancer of the stomach was made, although no cancer was present, and the patient was operated on unnecessarily; in some instances, death has ensued. In certain cases of suspected early cancer of the stomach, a report has been made that the patient did not have a cancer, when subsequent investigation showed that the lesion was present but was too far advanced to permit the saving of life. From an economic standpoint, it should be mentioned that countless numbers of cases have been reported positive for a certain disease which did not exist, such a report resulting in the patient being treated for a considerable period and at a tremendous expense. The conditions just mentioned may prevail when a physician who is not a radiologist uses the x-rays for commercial and pecuniary purposes. A physician who is not trained in the art of radiology is a potential source of danger when using the x-rays; such a practice does not meet the approval of the medical profession.

An x-ray examination by a radiologist bears a close similarity to the procedure of a physician who examines the heart of a patient with his stethoscope. The physician does not see the heart in action, but he makes a diagnosis through the alteration in the sounds of the heart, which his medical training and experience permit him to distinguish from that of the normal heart. Any one can be made to hear distinctly the heart sounds with this instrument, but unless the one who listens is a physician, the sounds heard are meaningless. Likewise, in making an interpretation of an x-ray film the radiologist studies the shadows of that part of the body under consideration from a medical point of view. He has to apply his knowledge of anatomy, physiology, pathology and medicine to arrive at a correct diagnosis, and for this reason he becomes a medical consultant, such as an internist and surgeon. In order to be regarded as a radiologist, he must have served as an apprentice under some experienced specialist and have acquired an extensive and satisfactory experience.

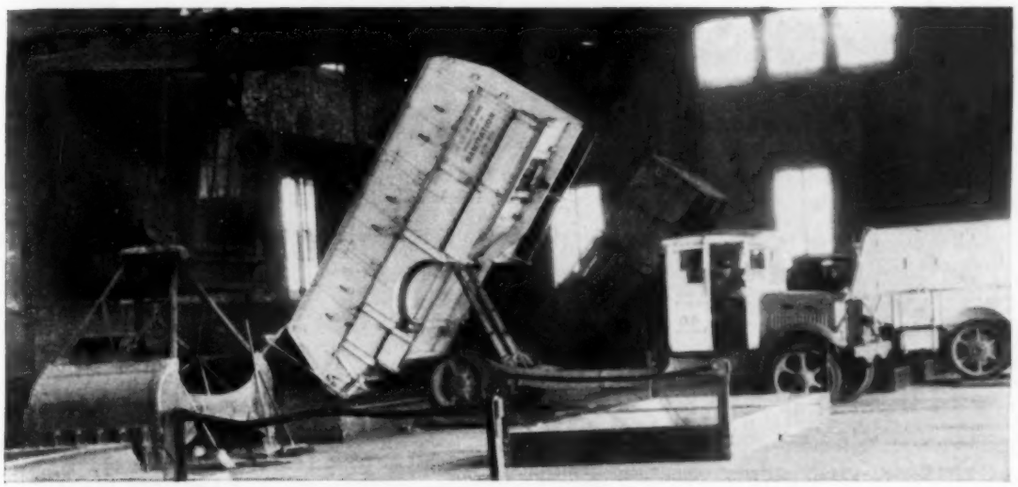
A surgeon's decision to perform a major operation on a patient is often the result of a consultation with the examining radiologist. A physician sometimes advises his patient to seek a change of climate in search of health, often at a great sacrifice to the patient and his family. Such a recommendation is at times the result of a consultation between the physician and the radiologist. These are matters of grave importance and certainly require expert knowledge and advice. In cases of fractures, the radiologist is called on frequently to ascertain the position of fragments and also to observe the progress of healing. Such radiologic examination is of help in reducing fractures and dislocations and thus in preventing deformities such as shortening of a limb.

The diagnosis of bone tumor is, in most cases, made by means of the x-rays, which will also determine whether or not the type of tumor demonstrated is one that will necessitate an amputation. No one can deny the need of radiologic medical knowledge in reaching such a decision. Then again, the x-rays play an important part in the diagnosis of cancer within the human body, and often the radiologist is called on to render an opinion as to whether or not the condition is operable. The result of radiologic observation in such an instance will often prevent a needless operation, and at times cases which from clinical observation have been considered inoperable are found radiologically to be operable. In this manner many lives have been saved.

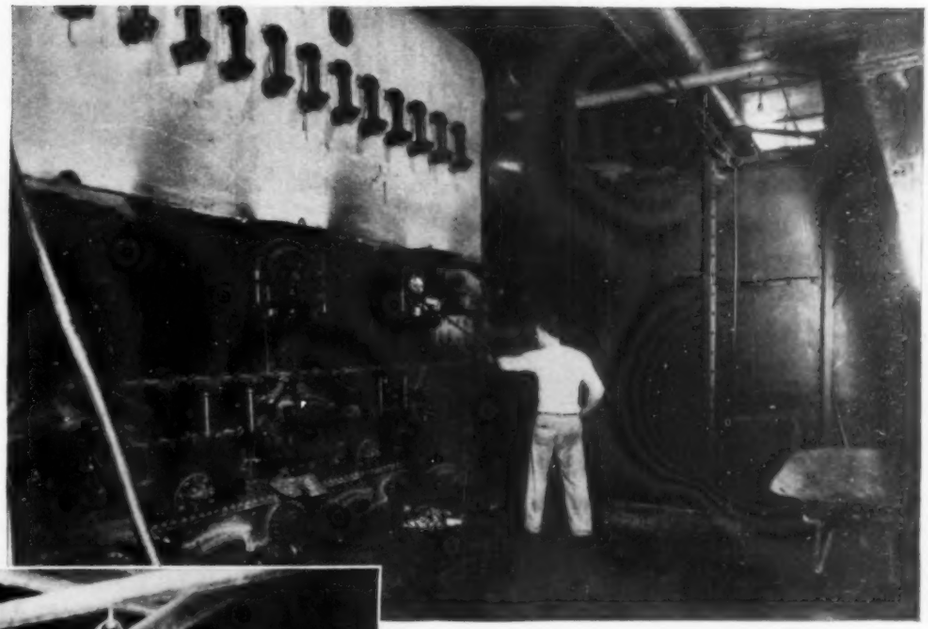
Need for Legislative Reform in Some States

It is possible to recount innumerable similar examples in which the x-rays when employed by a radiologist have been proved to occupy an important position in the diagnosis of disease.

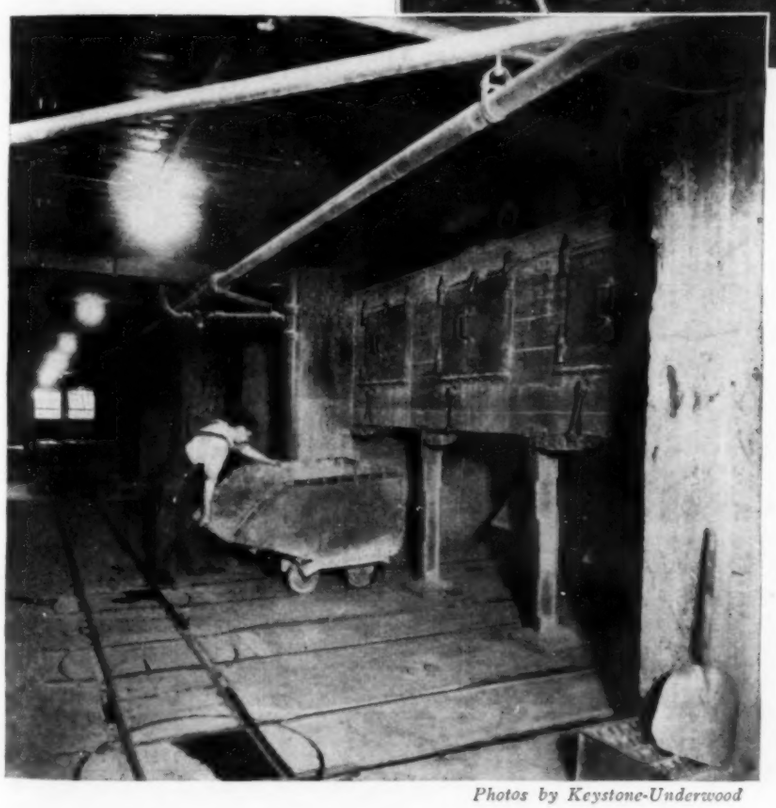
If an impartial and unbiased review is made of the dangers attending patients when subjected to the x-rays by nonmedical men, it will show the necessity for an immediate amending of the medical laws of those states which now permit nonmedical men to apply indiscriminately an agency so powerful and so potentially dangerous to the human body as the x-rays. The law should be explicit that only a duly qualified radiologist should use the x-rays for the diagnosis and treatment of disease. This would in no way interfere with the important work of the technician but would prevent him from assuming the responsibilities of a physician.



AUXILIARY PITS hold excessive garbage until furnaces are ready to burn it.



A workman is shown "slicing" the fire in one of the immense furnaces of the Ravenswood incinerator of Long Island City. The furnaces are capable of handling 370 tons of garbage a day.



Incineration

AN UP-TO-DATE METHOD OF GARBAGE DISPOSAL

Ashes are removed every three hours from the Ravenswood incinerator by small trucks. Larger trucks are used to carry away the powdery residue to fill in swampy land.

Photos by Keystone-Underwood

SCHOOL—OR A JOB?

PETE could see the blackboard at school "fine," as he himself expressed it, if he was close enough to it, but he had to be quite close. His geography must be held almost on the bridge of his nose, if he had to read it much, but Pete was not likely to worry about that, because he was nearly 14 and he was tired of school. He greatly preferred work. In a short time he was going down to the school doctor's office and get his card saying it was all right for him to go to work. Then he would be free!

There was one fly in the ointment. His teacher did not give him good grades and continually kept telling him that if he would get glasses, he could improve his record. Probably that was one reason he wanted to be free. The school nurse too had hinted that sometimes one could not obtain a work card if one's eyes were not good—at least until glasses were procured, but Pete felt that was mere bluff and reported the joke with considerable amusement to his father.

His father was concerned. If Pete did not want the glasses, probably he did not need them, but those notices sent home from the school and the nurse's visits had been a bit disquieting. Well, Pete would be at work soon anyway, so perhaps they were not necessary. But his father's best friend told him one day that the doctor would not let *his* boy go to work in the mill till he had glasses.

"I thought he was bluffing, so I went down to see him," he said, "but there is no fooling about it. He'll give you a few days to get them, and then it's a case of no glasses, no card."

Pete's father decided he would not have an encroachment on his boy's rights, so Pete remained as before, and the glasses stayed in the shop.

And then Pete celebrated his fourteenth birthday by getting a job as wireboy. That afternoon he marched proudly upstairs to the examining doctor's office and condescended to remark, "Say, Doc, I got a good job here. Gimme my card so I can get to work."

"All right," said the doctor, "provided you can see all right and a few other things. Let's look at your school card. Well, well, the nurse made ten visits to your home about your eyes. Come on, we'll test them up. Just read that top line on the chart to me."

"Gosh, Doc, I can't. It looks all fuzzy."

"Well, try it with the other eye."

"Can't see with that one either."

"We'll give the rest of you a looking over, anyway, and see if you are all right except the eyes." And after the examination the doctor declared that Pete was.

The decision was that if Pete was going to be a wireboy, he'd have to have glasses. The doctor would protect him in keeping his job by giving him a short time to get the glasses, but Pete was angry and decided he would go to his family doctor and get passed by him. He had a perfect right to do that.

But the worst of it was he had to tell the family doctor why he had been turned down. On learning this, the doctor said, "Don't you know, that you are risking your neck working around machinery without glasses? The examining doctor is absolutely right. You get no card from me either till you get glasses."

"But they'll call me Old Four Eyes," mourned Pete.

The glasses, however, were procured in a hurry, and Pete saved the job. The other day he changed jobs, and this time he walked right up to the examining doctor and remarked, "You know, Doctor, you are right. I did need glasses badly. The other day I saw a bad accident down town. An auto hit a man, and come to find out about it, he had the same trouble with his eyes that I did. You can't be too careful these days, can you? You thought I was pretty sore before, and I was, but now I know you were my best friend."

"Well, son," said the doctor, "you're a lot older now mentally, and I'm going to tell you a few things about you people who are 14 and 15 years old and want to go to work.

"Many believe you should not be allowed to go to work till you are 16, and I agree with

By HUGH G. ROWELL

them, unless you fellows and girls only do certain kinds of work and are carefully examined and then are watched pretty closely while you are at continuation school to which you must go every week, one morning, till you are 16. Otherwise they are absolutely right.

"You noticed when you came up here we asked you a lot of questions about yourself and then we gave you a pretty thorough physical examination. We tested your eyes, and we weighed you, and we talked with you. It took a little time, but after we have examined boys and girls that way, we can be pretty sure whether or not they are well and fitted for the work they want to do.

"If you were blind in one eye, we wouldn't let you work near machinery at all, nor would we if your eyes were poor, till after you got glasses.

"If you hadn't weighed nearly as much as you should, we would have given you a thorough examination including the lungs to find the trouble. If we couldn't find any cause, we'd ask you about your food, about your sleeping habits and about the amount of time spent outdoors in the daytime and about open windows in your bedroom at night. For example, some boys and girls don't eat any breakfast before they go to work because they get up so late; we have to talk that over with them.

"If we did find some trouble with the lungs, we'd have an expert examine you and let him decide whether you should work or not. If the trouble was serious, perhaps he would see that you went to a hospital.

"What we try to do is to avoid misfits. It doesn't do you any good to try to learn some sort of work for which you are not fitted physically; besides, you will not earn as much as if you get into something else. The Y. W. C. A. helps us get jobs for the girls, and the papers and some of the business firms find jobs for the boys we have to turn down, so that we really do much more than examine you. You probably never guessed it, but if you had told me that you couldn't get the money to pay for your glasses I would have sent you to the Family Welfare Society or to the hospital, and either one of them would have loaned you the money and let you pay it back week by week, or else one of the men who sell glasses would have let you buy them on the installment plan.

"Don't think it is all over now. At the continuation school you will be weighed every month, and a record will be kept. Every time you change jobs you will come back to see me for another examination until you are 16. If you get tired of working, we will arrange for you to go back to school, and you will appreciate your school more if you do, because you will begin to see what it means to you.

"But, doctor, I never saw you turn down any one except me."

"Well, son, we don't make much fuss about it, and besides we try to help them get other jobs. We tell them just why we are doing it, just as I told you, and they see the point usually and agree with us. No one wants to take more risks than he has to and every one wants to get into some work where he can make the most money."

"But, Doctor, how do you decide about these things? Does every doctor know all about this?"

"Most of them are learning about it because those who are doing such work study it closely and write papers about it for others to read, that they may know what our experience has been. We try to find out true conditions by visiting the places where you people work, by studying the jobs there, especially any dangers, by talking with those who understand the most about it, and finally by reading all the other papers about it that we can find. We're pretty likely to ask advice if we are in doubt."

"But why do you make such a fuss about us when we are 14 and 15 and not earlier or later?"

"That's because no one should go to work at an earlier age than 14. You are fairly well matured at 16, but at 14 and 15 you are just changing from child to adult, and it is a rather hard period to go through. You feel indifferent and you are growing rapidly. Some persons believe for this reason that you would be better in school. The only reason I don't agree is that some of you are tired of school; you have minds which desire work rather than learning; you may actually be better workers than

scholars. Furthermore, as you have seen, the schools are packed full everywhere, and it will be some time before the cities catch up with their needs.

"If some of you who don't care to go to school and really prefer to work can do so without harm, it may be better for you. At least the community is not spending money on you when you're not trying to do your part.

"As to the harm, that is what we really worry about. I have studied the matter a little by examining records of you people, and some of you certainly seem to gain while at work, often more than in school. Of course, I mean if you work under good conditions and the hours are reasonable."

"Well, Doctor, I guess you and I are going to be pretty good friends. I want to tell the other boys about it, because I've heard them kick sometimes and say you were altogether too stiff. I see you're right though. Until we find out for sure, at least, we ought to be watched pretty carefully till we're fully grown; and if that can't be done, I guess we ought not to be allowed to work till we are really men and women."

"All right, son, but don't forget this: The school is the real place for you. And if you don't appreciate it now, you will later."

BRIEF HEALTHGRAMS ✣ from Articles in This Issue

¶Arthritis is a term used to designate a constitutional disturbance that manifests itself by inflammation of the various bony and soft tissues which go to make up a joint or which lie over or close to a joint. *See page 126*

¶Whenever a boy loses breath easily, whenever he begins to be a little bit uninterested, look for health hazards. *See page 118*

¶An x-ray examination by a radiologist bears a close similarity to the procedure of a physician who examines the heart of a patient with his stethoscope. Both the radiologist and the physician are diagnosticians. *See page 157*

¶"If you were blind in one eye, we wouldn't let you work near machinery at all, nor would we if your eyes were poor, till after you got glasses." *See page 160*

¶Shortly before George Washington expired, he felt his own pulse. He thus evidently realized that the end had come and gave up hope, for immediately a great change came over his countenance, and his hand fell lifeless to his side. *See page 132*

¶Menu planning affords excellent opportunities for the use of skill and artistry in achieving good nutrition, maintaining variety and sustaining interest. *See page 152*

¶The youth in a rattle-trap may roll along as merrily as the youth in an expensive car; but as age approaches, one finds oneself increasingly dependent on the wearing quality of the machine. *See page 148*

¶By conditional reflex is meant a response elicited on the basis of a previous experience. If, for instance, you let a hungry infant smell a rose immediately before giving him his bottle, he will after a number of such experiences react regularly by opening his mouth whenever you let him smell the rose, even though there is no bottle in sight. *See page 136*

¶The Greeks utilized suggestion and sometimes treated their sick with prayers and charms. While they made offerings to the gods, they were apparently too wise to trust such virulent forms of bodily disorders as ulcers and wounds to the ministrations of deities. *See page 123*

¶Steering the ship of health for the right port requires that you chart your course thoughtfully. The goals of living are physical strength, mental strength and moral strength. *See page 144*

¶In an age such as the present it seems incredible that men and women who can read and hear should continue the pursuit of cure-alls and risk their lives on the word of those who write clever advertisements. *See page 107*

¶"When they go on a journey," remarked Marco Polo, speaking of the Mongols, "every man takes some ten pounds of this dried milk with him, and of a morning he will take half a pound of it and put it in his leather bottle, with as much water as he pleases. So as he rides along, the milk paste and the water get well churned together into a kind of pap, and that makes his dinner." *See page 140*

¶The school nurse does not diagnose; she does not give treatments; she does, however, explain to the students and parents the necessity for medical advice, and she urges consultation with the family physician. *See page 129*

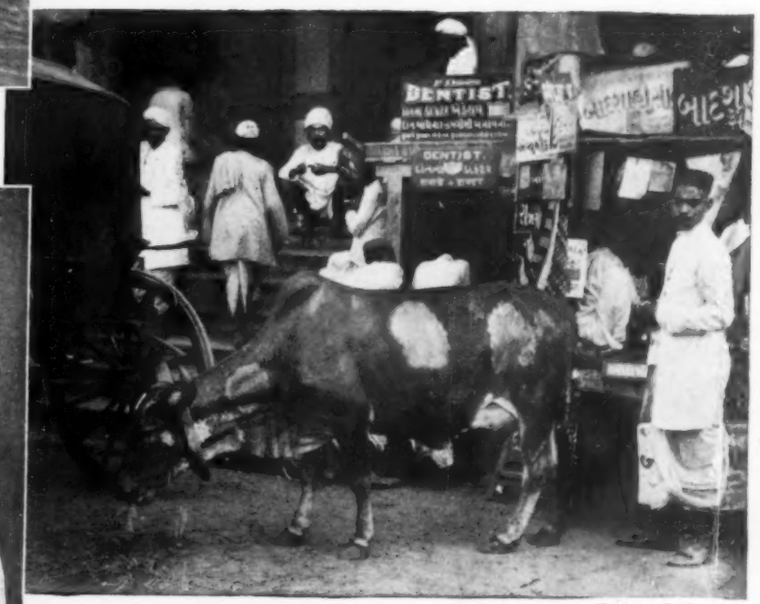
¶In the average person who lives to the age of 65, the delicate muscular pump called the heart contracts 2½ billion times! *See page 113*

Acme

Globe Photo

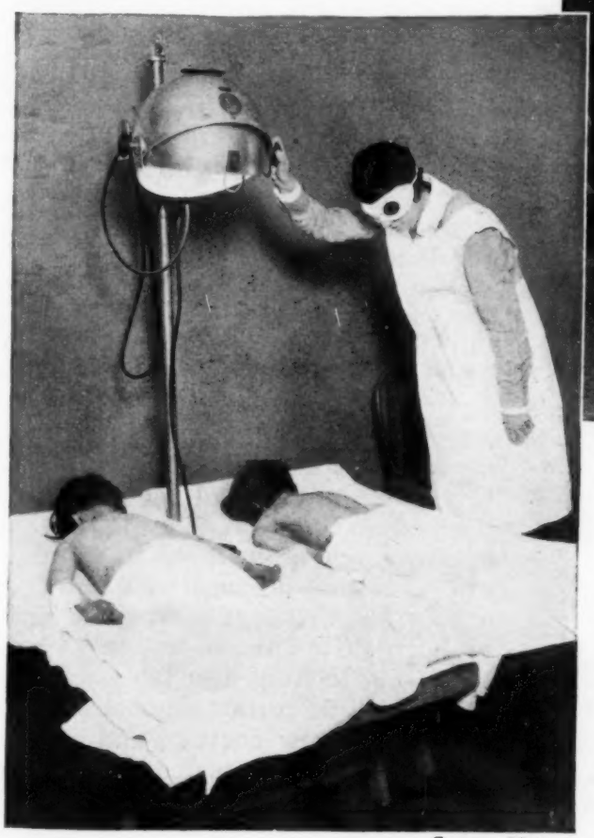
WATER SKIING

A group of army men is seen in the picture above acquiring skill in water skiing, a new type of navigation which is a requisite for certain infantry detachments of the Roumanian army. For sport rather than for training, the young Englishman to the left engages in water skiing on the Thames. What invigorating exercise this must be!



Ewing Galloway

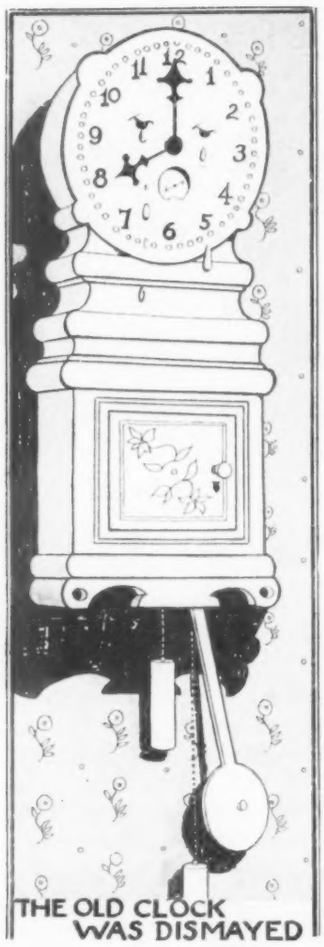
In Calcutta, to kick a cow, which is sacred to the Hindu, is to be liable to a beating from an impromptu mob or to a jail sentence for misdemeanor.



Century Photos

CRIPPLE CHILDREN

The Jesse Spalding School for Cripple Children, which is sponsored by the Chicago Board of Education, offers every opportunity for handicapped boys and girls to develop mentally and physically. The photo shows two children receiving an artificial sun bath.


THE OLD CLOCK WAS DISMAYED

Health by the Clock

THE OLD CLOCK was dismayed. She hid her face behind two pointed hands and wept oily tears of despair and resentment. In the entire forty years of service on the parlor wall, she had never been so worried, so humiliated as she was at that moment, and all because those naughty Hour children had been constantly getting into mischief.

Why, Yesterday Morning had scarcely raised the curtain in the eastern window before the trouble began. The Old Clock trembled now at the memory of five little early Hours crying fitfully in their cradles when they should have been sleeping quietly. But how could one expect them to be well and happy when they had eaten too much candy and too many sweetmeats? Oh yes, they had been extremely unruly and hard to manage, as were their older brothers and sisters when they tumbled forth from the snug little workshop back of the Old Clock's face.

Eight, whose duty it was to be punctual, overslept and had to eat his breakfast in such haste that it did not digest readily, and all morning long he had complained of a pain deep down inside of him.

Nine was tardy to school and quarreled with his brother Ten until the teacher was glad when Eleven came to take them home. What a troubled morning it was, indeed!

Twelve and One would not eat their spinach. Two kicked up a terrible rumpus and would not take his afternoon nap. And Three—well, my goodness gracious—Three was the naughtiest of them all. He said horrid little words under his breath and would not go outdoors to play in the warm sunshine. Was it any wonder the Old Clock was frightened and distressed!

Even the Baby Minutes had been bothersome. They sucked their thumbs until their mouths were ugly and misshapen. Some of them forgot to brush their teeth; others refused to wash their hands and faces and were not pretty to look at.

Out of the whole twelve hours of the day, not a pleasant thing had happened. And now another morning promised to be just as disturbing. The Old Clock felt that something must be done. What it was to be she could not imagine. Her head ached dreadfully, and she was all confused in her thoughts.

At this moment Mr. Cranford entered the room. Mr. Cranford was the proud owner of the Old Clock on the wall. He had always told his neighbors it was one of the best timekeepers in the village. The Old Clock appreciated this compliment and had tried to live up to that reputation. Until the past month she had been successful. Mr. Cranford could depend on her at all times. Now, for some unknown reason, things had become tangled. Often of late she had not been able to determine whether it was just past dinner time or whether it was time to go to bed. Even now she was uncertain whether or not Mr. Cranford should be off to work. He might already be ten minutes late or maybe fifteen. Mr. Cranford particularly disliked people who were late to the office. "In this day of clocks and watches there is no excuse for tardiness," he had repeatedly remarked to his wife. And knowing how exacting he was, she in turn had always served his meals on time.

EVEN THE BABY MINUTES HAD BEEN BOTHERSOME

Now Mr. Cranford seemed to be in no hurry. He strolled leisurely about the room, looking into table drawers and snug little corner cupboards. The Old Clock grew nervous and fidgety. She coughed and started to strike in a dull monotonous voice empty of

music: 1, 2, 3—Mr. Cranford peered at her over the rims of his enormous glasses—4, 5, 6.

He gasped and pulled his gold watch from his inner pocket. It was 20 minutes past 8. Merciful goodness! He was already a half hour late to work.

"The clock! he exclaimed. "Something is wrong with the clock," and he snatched his hat from its accustomed peg back of the door and hurried along the street.

The Old Clock felt terribly ashamed, and it was then she hid her face behind her pointed hands. Try as she might, she could not tell the correct time. She kept on counting hopefully: 7, 8, 9, 10. Here she lost her breath and made queer little gurgling noises far down inside of her wooden throat: 11, 12, 13.

She was all wound up and dizzy and excited. She was certain there were only twelve Hour children; yet she had counted thirteen.

That afternoon a wagon came and bore her away to the hospital. When she saw the great number of clocks that had been brought in for repair, she felt somewhat comforted. Many of them were more pretentious than she. And the "doctor" did not seem to think it a disgrace for any clock to lose its ability to tell time. She liked the doctor from the moment he took her in his big kind hands.

"Hmmmmmmmmm," he said in an understanding voice, "it's a wonder you could run at all. The corners of your workshop are filled with dust and dirt, and the springs of your children's bed are gummed up and sagging with cobwebs. What you need is a thorough house cleaning. Cleanliness is the first law of health and happiness even among old clocks."

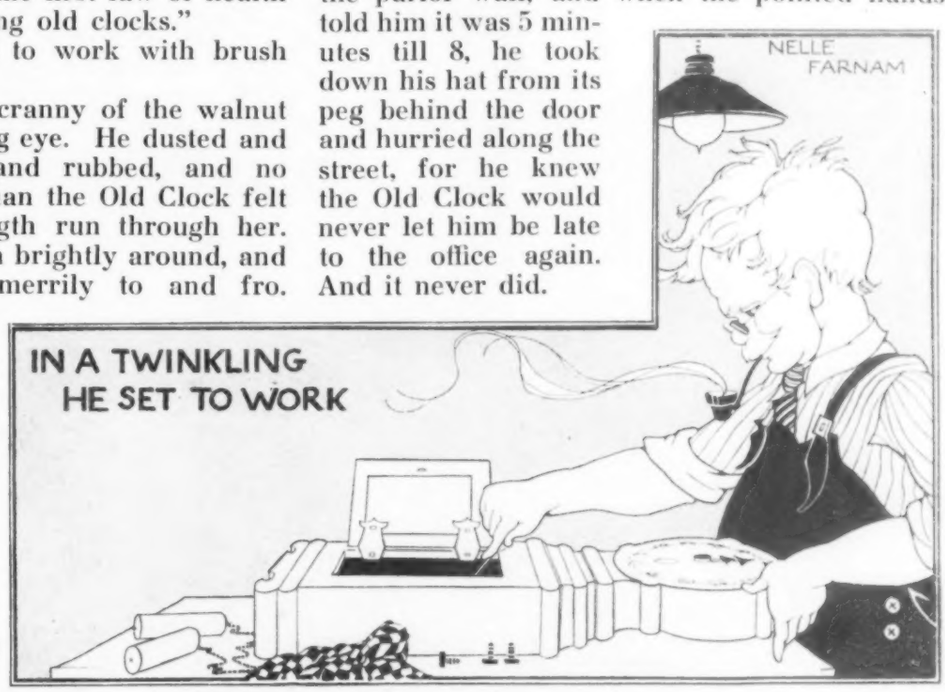
In a twinkling he set to work with brush and oil.

Not a single crack or cranny of the walnut case escaped his searching eye. He dusted and scrubbed, he polished and rubbed, and no sooner had he finished than the Old Clock felt a new energy and strength run through her. Her gay little wheels spun brightly around, and her pendulum rocked merrily to and fro.

Instead of coughing and scolding she began to purr softly to herself. At last she broke into the most rhythmic tick-tock song you have ever heard. She was like a happy child whose mother had bathed him and dressed him up in fresh clean-smelling clothes. As if by magic her headache disappeared and she could tell time correctly. Never again would the happenings of day and night confuse her. Never again would she need to hide her face in shame behind her pointed hands.

And the Hours—bless their dear little hearts—they were just as obedient and well behaved as any little children could be. They remembered when it was time to brush their teeth, to eat their vegetables slowly and to sleep and play at the proper time. Instead of crying themselves awake, they dreamed happy dreams at night and danced the day away on their golden tiptoes to the music of the Old Clock's song.

And pleasant Mr. Cranford smiled contentedly as he wound his precious timepiece on the parlor wall, and when the pointed hands told him it was 5 minutes till 8, he took down his hat from its peg behind the door and hurried along the street, for he knew the Old Clock would never let him be late to the office again. And it never did.



By MARGUERITE GODE

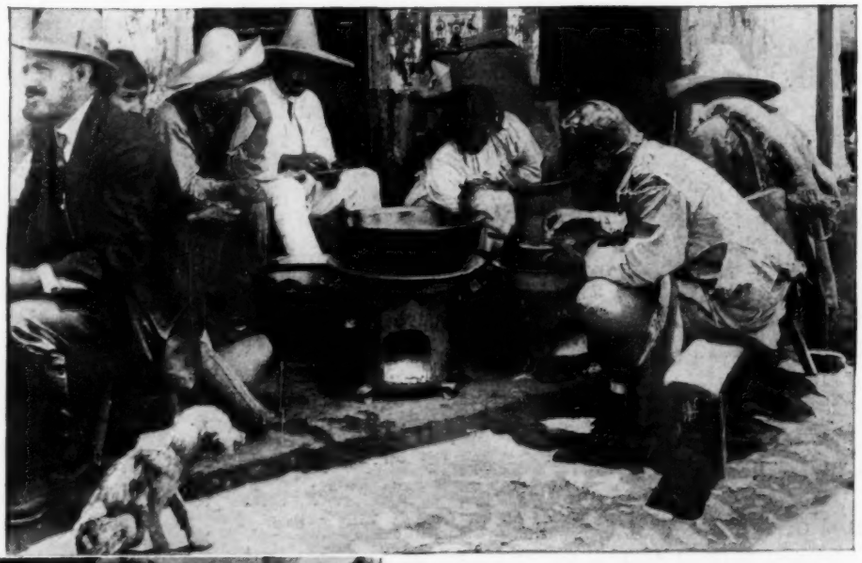
Native Dishes, Differ in Lands

FRANCE

Office employees and tourists in Nice enjoy an oyster luncheon when they stop to see Billy, the street oysterman. What a convenient restaurant!

MEXICO

Community bowls, so to speak, hold the food of outdoor dispensers in Mexico City. Barefoot peons take their allotted portions from the bowl with their fingers. Sanitation seemingly would be an unwelcome dinner guest.



Fotofeatures Service

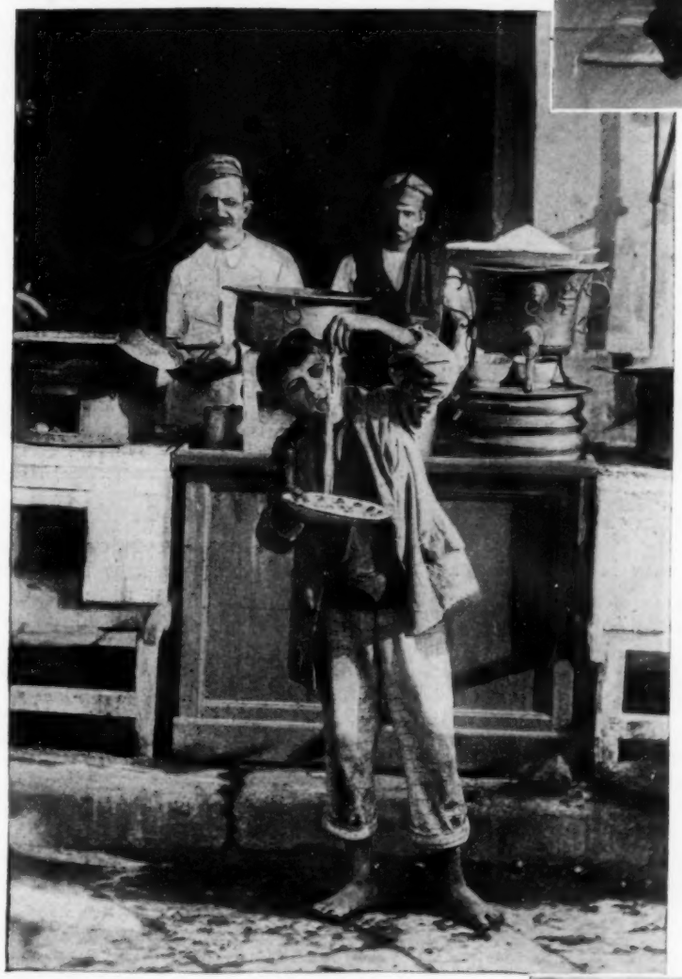
PALESTINE

A few beans, some broiled mutton and a piece of bread constitute a nice lunch for the Oriental of Jerusalem. The "sandwiches" more or less resemble the American barbecue.

Dining Customs Throughout the World

JAPAN

Seated on cushions before stool-like tables, these Japanese are engaged in a typical feast. And all dressed up in their holiday best!



ITALY

It is all a matter of getting the right tilt to the head in conquering spaghetti of this length. "Lazarone" is the famous Italian spaghetti dispenser of Naples.

CHINA

The food which the Chinese manipulate so skilfully with chop sticks consists mainly of simple dishes, especially among the lower classes. Chop suey, so well relished in America, is practically unknown to the average Chinaman.

Fotofeatures Service

SCHOOL AND HEALTH

A Department Conducted by J. MACE ANDRESS, Ph.D.

67 Clyde Street, Newtonville, Mass.

Source Materials That Lead to New Adventures

EVERY year, thousands of teachers write letters saying, "I am planning a health project. Where can I get material?" Or they say, more specifically, that they want "materials, such as posters, pamphlets or plays." To many of these teachers health education materials seem to be limited to printed matter.

Other teachers find health education materials in the schoolroom, in other parts of the school building and playground, in the homes of the children, in the town or in the surrounding country.

These teachers see that any book, window or chair provides materials which may be used in solving the problem of how to get the best light for reading.

Any washroom provides the essential materials for solving problems about handwashing. If the washroom is fully equipped, the problems lie in the use of the equipment. If the room is poorly equipped, the problems are multiplied and include the procuring or making of handwashing facilities. In thinking about this problem together, children learn, even though the equipment they plan is crude.

Any playground provides at least some of the materials essential to solving the problems of getting enough wholesome outdoor activity.

Any lunchroom, or the serving of any kind of school lunch, provides the materials for study of food selection and cleanliness in handling food.

Sometimes, it is true, these materials are meager and not well adapted for promoting healthful living. In that case, is it not better to seek real materials, which will remedy the actual condition, rather than to seek pamphlets, posters and plays which may or may not be related to the problems which the children face daily?

In the home environment of the boys and girls, teachers may find still other useful and intensely interesting materials for health instruction. How does Mary's mother care for the milk? How does John's father protect the well? What utensils and tools does Jane use in helping mother to keep the bathroom and other rooms at home clean? How does the town water-supply work? What are the traffic regulations that make streets safer? What do grocers do to keep food safe and clean? What does the board of health do to protect the community? What do the museums tell? The most useful materials of health education, in other words, can be found in the surroundings in which children live.

In solving the problems which arise from their surroundings, children ask questions. The children's observations of their own environment and observations of their own experiments should be richly drawn on for answers. Questions may be asked of those who know the answers, as for example, John's father, who runs a bakery, or Mary's uncle, who is on the board of health.

One continuously useful type of material for answering questions, is, of course, the printed accumulation of what other people have found out, and here one turns to books, found at school, at home, or in the public libraries or procured through governmental or other agencies.

In the experiences in problem solving which teachers describe in the following articles, common materials of living, found in the school, the home or the community, were used.

It is interesting to note that when the children had questions for which they wanted an answer, they themselves went to their textbooks with interest and purpose to seek information. A textbook that may be uninteresting reading when unrelated to the child's own activities becomes a welcome source of information when the child really wants to know something. For teachers who feel that textbooks are unnecessary, this is worth pondering.

The contributions under "Teaching Health" in this department continue the story of the fascinating and practical experiments in health education which are now being conducted by teachers in Guilford County, N. C. The series was begun in the January number.

TEACHING HEALTH

(In this column will be published each month concrete examples of good health teaching. Teachers are invited to send in contributions not exceeding 600 words and preferably less to the editor of this department. Illustrations of the actual work of children will be welcomed. Contributions accepted will be paid for but no manuscripts will be returned.)

HOW WE GROW

I LEARNED by observing school lunches and through informal questioning that only nine of the forty-three children in grade 2 B were drinking milk. Some of the children did not have milk at home to bring; others did not like milk. Many lunches contained poorly selected foods. With the help of both children and parents an appraisal was also made of the children's meals at home and of their other health practices and habits. This revealed definite points on which the class needed educational help.

The class study began naturally, without artificial stimulation of interest. One day during the first month of school the class talked of learning to drink milk a new way. The following day twenty children brought milk and were given straws through which to drink it.

When the school nurse visited the school, the children asked her to talk to them about the value of drinking milk. Realizing that they had little classroom material, she promised she would give them a reading book on milk, provided they showed their interest in milk by bringing it to school for one whole month.

Since these children were small, the teacher felt that a classroom record would help them to remem-

ber, so she made a chart, "We Drink Milk," for each child; on this he might keep his own record of bringing milk to school. The children were greatly interested in keeping this record. Nearly every one began to drink milk.

Many problems arose as this activity continued, and some of them the children themselves were able to solve. In each instance the pupils were led, so far as it seemed appropriate and natural at this age level, to follow the logical steps of problem solving.

They took as their major problem, "How Can We Help Our Growth?" Here they raised some definite questions, such as, What foods make us grow? How can we select a good lunch? How shall we care for the milk we bring from home? Shall we wash our hands before eating? Why are exercise and fresh air important? Do we need rest and sleep? Stating these questions in a clear manner for study provided several group language lessons.

Standard "A" Lunch

The children were encouraged to seek satisfactory answers to their own questions. First they concentrated their attention on what food to choose for growth and how to care for this food. Sometimes the children played cafeteria. They built up a standard "A" lunch and wrote it on the blackboard. Cardboard food models cut from magazines were arranged in cafeteria style. Children passed by to select lunches. Each child was judged by the other children as to the selection of an "A" lunch. In order to gain a better understanding of "A" lunch selections, the children collected information on food values and care of food. References were found in reading books, library books, bulletins and booklets sent out by commercial food companies. This accumulated material was the basis of many discussions within the pupil group and resulted in some real understanding of what was desirable. Not only did children talk about the lunches brought to school but they also wanted to talk about their breakfasts and other home meals. Each child checked his own diet by the list which had been written on the board.

Some facts discovered in reading were found true through actual experimentation. For example, it was found through experience that it was a better practice to put the milk in a covered box in the window. This procedure kept it cool and protected it from dust and flies.

In these ways, children learned that a well chosen meal may contain foods such as milk, green vegetables, cooked cereals, brown breads, stewed or fresh fruits, a little meat and eggs. As a definite result of this study the children were able to select a better balanced meal and were anxious to choose foods that would help them to grow. Some interesting little booklets were made on "A" lunches, and food costs were worked out in arithmetic. "A" lunch cards were also made for each child to carry home. The pupils shared their information with other children in the school by giving a program on the subject of foods that help children grow.

In checking at the end of the year to note progress, the class found that it had made some real improvements in food habits. Nearly every child was drinking milk, and the number who were drinking coffee had been reduced. Curiously enough, most of the coffee drinkers had been boys; they made a definite effort for improvement. Children helped care for foods at home and in school and seemed to enjoy eating with clean hands. By the explanation of the need for better lunches and by the suggestion of better foods for children, the cooperation of mothers had been gained.

Forming Health Habits

Realizing that other factors helped growth, the children next considered fresh air, exercise and rest.

Various questions were discussed within the group, and as many facts as possible were collected through books. Children also reported observations of what boys and girls did who were older than they. The children soon learned to choose those observations which were good and to discard those which were not worth while. They noticed that children who take exercise in fresh air are usually rosy cheeked and bright eyed and that they feel like working after exercise. The children decided it was good to play and run and take exercise outdoors daily.

It was interesting to find that following the discussions the children as a group wanted to play games outdoors every day the weather permitted. They also were more interested in joining in exercises in the schoolroom with windows open when rainy weather kept them indoors.

From these discussions of exercise they turned to questions on sleep and rest. Again the members of the class collected all the facts they could which related to favorable conditions for the most restful sleep. Reading books, textbooks and library books were again thumbed. Again the children tried to observe and to report their own habits of rest and sleep in the home.

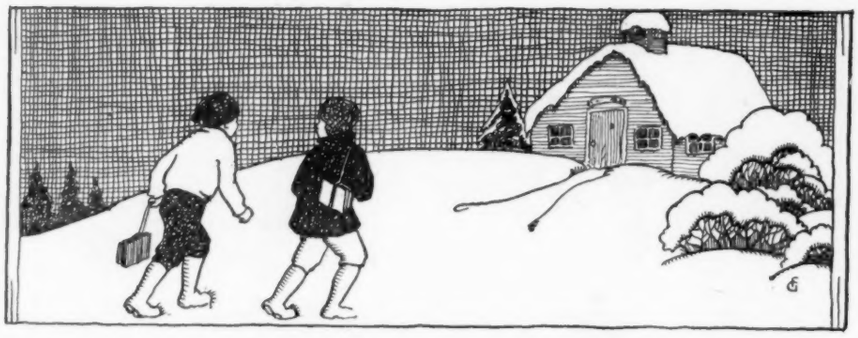
They soon found from their own experience that children feel better if they sleep long hours every night and have regular hours for going to bed. Some facts were tested through experiment in the schoolroom. For example, it was found desirable to have a rest of twenty minutes after the noon recess or lunch. The class felt better and felt more like working.

Reaching Right Decisions

Finally all information was made into a practical plan for class use. It was decided that the pupils should go to bed early and regularly every night; that they should sleep eleven hours in bed, with a rather low pillow and with the right amount of bed clothing to suit the weather conditions; that they should prepare themselves for bed by washing the face, hands and feet, by brushing the teeth, by changing daytime clothing for suitable night clothing, by taking a full bath at least twice a week and by opening the windows wide.

Each child made informal reports from time to time on his bed hour and on changing clothing and sleeping with open windows. Children were quite frank about this and sometimes said they had not carried out the entire plan. On the whole, however, these reports seemed to show a large number who developed better habits and certainly there was a noticeable improvement in the class attitude toward resting.

LETITIA WEATHERLY,
Guilford County, N. C.



LEARNING THROUGH USING THE SCHOOL CAFETERIA

THE JAMESTOWN School, in which this cafeteria experiment was undertaken, is a large consolidated rural school. Since the cafeteria was not large enough to accommodate all the children, only those who actually bought lunches ate in the cafeteria. A teacher of the fourth grade wished to use cafeteria experience as a means of guiding her entire group in the selection of wholesome foods. Forty-two in the class brought lunch from home. Only two pupils supplemented home lunches from the cafeteria. To facilitate this project the principal allowed this class to use the cafeteria twenty minutes before the remainder of the school group.

Adoption of a Schedule

Another adjustment of class schedule provided time for the pupils to work on this problem. The teacher divided her "health hour" into three equal parts:

Twenty minutes before going to the cafeteria was devoted to planning a lunch from the cafeteria menu and washing hands in preparation for lunch.

Twenty minutes in the cafeteria was used for selecting and eating lunch.

Twenty minutes after returning from lunch was spent discussing the cafeteria experiences, such as table courtesies, nutritional value of the food selected, care of the food, and the eating environment.

A study made by the teacher showed that only six of the forty-four children drank milk, although in nearly all instances there was milk in the home. Almost all the home lunches contained poorly selected foods.

One day the teacher told the class that every one who brought milk from home or bought it from the cafeteria the following day could have the privilege of taking his home lunch and milk down to the cafeteria and that there would be a surprise. The children were delighted; some of them had never been inside the cafeteria, and a surprise is always challenging. The next day thirty-two children brought milk. The surprise was a chocolate milk for each one. The same surprise was given on other days. Gradually, one by one, the children brought milk from home or bought it, until almost every one drank milk. As this activity continued, many problems arose, and for their solution the pupils were helped to find their own plans and to put these into action.

The first day the children brought their milk to school they put the bottles on the bottom shelf of the book-case. Consequently difficulties arose, and the children were encouraged to understand the situation thoroughly before seeking answers to their problems. This, of course, provided a vital experience in thinking and in expressing ideas clearly. A statement of the problems was made by the children and written on the blackboard: How shall we care for the milk that we bring from our homes? Where shall we keep it? How shall we label our bottles in order that they may be easily found? How shall we care for our milk bottle at home before refilling it for the next day?

Obtaining Refrigeration

The children then hunted information relating to the most desirable place for keeping the milk and to the care of milk bottles. When all facts were brought together, the pupils evaluated them. Those which were not considered scientifically sound and those which were not related to the particular problem were discarded. By actual experiment the children found that milk soured if it was left in a warm place all day. They also found that it could be kept cleanest and sweetest outside a window in an "ice-box." During the free activity period this "ice-box" was made by the boys from a wooden box and screen wire. The windows in the room faced west. To protect the milk from the early afternoon sun, the "ice-box" was put in the window shaded by outside shrubbery.

The question then arose as to how the pupils could determine their own bottles. One pupil suggested that each write his name on top of the bottle. This plan was tried but was found to be inadequate. After attempting several plans, it was decided to place strips of adhesive tape on each bottle. The name of the owner of the milk was written on the tape. It was necessary to mark the bottles each morning.

The next step was to put this plan into action. On arrival every morning each child labeled his own bottle of milk and placed it in the "ice-box" outside the window.

From time to time the children reported that their milk bottles had been thoroughly sterilized at home. From an informal check the teacher was convinced that not only had opportunities been provided for the children to practice taking care of milk but also the children had learned how to care for milk and to take a personal responsibility in keeping milk bottles clean and in placing them in the space provided.

A Check on Useful Sources

At the end of their study they decided the following sources had been most useful: discussions within the pupil group and with the teacher, supplemented by advice from the home economics teacher; reading reference materials, especially textbooks and some library books; observation of the manner in which the milk is kept in the home, and observation of milk when kept in various parts of the classroom.

When it was decided that all children should have the opportunity to use the lunchroom, questions arose concerning the most effective and economical way of washing the hands. More first-hand knowledge of actual school conditions became necessary. A committee was therefore appointed to report on the number and location of lavatories. Facts on the washing of hands as a health measure were gathered by other children from textbooks, bulletins and stories. All facts were put into concise reports for class discussion.

Finally, thoroughly convinced of the desirability of washing the hands before eating, they arrived at two main conclusions: (1) that the use of liquid soap and paper towels offers the best method of hand-washing and (2) that since the group was large and supplies and time were limited, it would be necessary to develop some systematic plan. The committee reported, however, that the school did not have enough soap and that the towel supply was limited. Some one suggested that the towel supply would last longer if each towel were cut in half. Another child thought that if every one would bring scraps of soap from home these could be melted and used as liquid soap.

Various other ideas were tried out. It was found through experience, for example, that it was better to leave the stopper out of the basin and wash the hands in running water.

To act on these conclusions necessitated real group cooperation. Children brought scraps of soap from home and melted them into liquid soap. They then developed the following system to relieve congestion during the hand-washing period. Children deposited their milk and lunch baskets on a clean table in the classroom before going to the toilet room. One child was appointed to pour soap from a small bottle. Hands were washed under running water. Another child gave out paper towels. As soon as he had finished washing his hands, each child returned for his lunch and milk and went immediately to the cafeteria.

Each morning a child was chosen to get the day's menu from the cafeteria manager. He wrote this menu on the board where all the pupils could read it. Just before "hand-washing," the pupils decided on the foods they would select from the menu to supplement the lunch brought from home.

Making Selection More Simple

This problem was an individual one, but basic facts were assembled and evaluated by the group daily. Reading materials gave information about desirable foods for a well balanced diet. A list of desirable foods in a day's ration was written also on the blackboard. Then an inventory was made of the foods available in the cafeteria and of those included in the lunches brought from home. Foods eaten during meals at home were reported. All of this helped each child to understand the points important to consider in making the best choice for himself.

Every pupil was asked to make a list of the foods he had eaten for breakfast and the foods he had planned for lunch. He then checked his own diet by the desirable list, which had been written on the board. From day to day opportunities arose for a child to evaluate the food selected in relation to its food value, the money he had to spend and the food brought from home.

The pupils in this grade applied the knowledge gained through their observations to several other activities. They gave a chapel program at which time foods needed by the body were emphasized. A health movie made by the children illustrated well balanced meals for growing boys and girls for an entire day. Another set of reels showed some "go" foods, "regulators" and "builders." A cumulative record of habits practiced each month was kept by the pupils. Another chart showing improvement in acquiring a liking for certain foods was kept and also a growth record. Menus including well balanced meals for a week were taken home

Some definite changes resulted from this activity. Not only did the children select better balanced lunches, but a large per cent also developed the habit of drinking milk. The habit of drinking coffee was reduced, and a smaller amount of candy was eaten. A better type of lunch was brought from many homes. Children learned to take a personal responsibility in the choice of foods, to eat some foods whether or not they liked the taste, and to help care for foods and milk, especially at home. During this study they gained a certain amount of detailed information on the various foods and their value in meeting body needs.

Drinking milk through straws was an entirely new venture for these children and consequently presented a problem in table courtesies. In addition, other table courtesies were analyzed as needs arose in using the cafeteria.

For ideas and information the children discussed the matter within the group and with their parents and teachers. They also obtained some special advice from a student in the home economics department. They observed in the cafeteria what courtesies were needed and what courtesies were used.

All the various ideas accumulated were ranked by the children in value for measuring lunchroom courtesies. The courtesies were then written on a poster and placed in the cafeteria.

TABLE COURTESIES

Chew food thoroughly.
Take small bites.
Drink by sips.
Keep lips closed while eating.
Keep hands, elbows and arms off table.
Swallow food before talking.
Sit up straight.
Be cheerful and happy while eating.
Use a fork or spoon to carry food to the mouth.

Each pupil was encouraged to check himself by this list and to work for personal improvement. An illustrated booklet was made, entitled "Table Courtesies for the Home and School." This was taken home to the parents. A mothers' party was given, and at that time children had an opportunity to practice some of the courtesies learned during the study. This party was held in the cafeteria,

and every one enjoyed it. Each pupil developed a feeling of responsibility for his own conduct as it related to himself and his classmates. It was also observed that other table courtesies desirable but not listed were practiced by individuals as an outgrowth of this experience.

LELIA S. ALEXANDER,
Guilford County, N. C.

NEW HEALTH BOOKS AND TEACHERS' MATERIALS

THE WIDER aspects of community hygiene are successfully covered in "Hygiene of Community, School and Home." [1] There is little new in its content unless it is the first chapter, which is devoted to the history of hygiene. From the point of view of the presentation of facts the authors have been most successful. Otherwise as a teaching tool the book is rather defective. The style is not attractive enough to make an appeal to the student unless he already has an interest in the subject. Questions, exercises and experiments at the end of chapters would have been helpful. The text could be greatly strengthened by suggestions on how the pupils might study their own community. Although there is nothing in the book to suggest where it is to be used, it will probably fit into high school or college. As a reference book it should be valuable for all teachers.

A PRACTICING dentist is naturally asked a number of questions by his patients. Dr. Carl W. Adams decided to write a practical book based on these questions and his answers. "Your Teeth and Their Care" [2] presents a wide range of information on the structure, function and care of the teeth in language which the layman may comprehend. Although it is intended as an aid to dentists, it should be a helpful book of reference for teachers and students.

1. By Steel, Ernest W., and White, Ella G. Price, $2.25. Pp. 368. New York: Harper & Brothers, 1932.

2. By Adams, Carl W., D.D.S. Price, $1.25. Pp. 141. St. Louis: C. V. Mosby Company, 1932.

NEW BOOKS ON HEALTH

HABITS: THEIR MAKING AND UNMAKING

By Knight Dunlap, Ph.D., Professor of Experimental Psychology in the Johns Hopkins University. Cloth. Price, $3. Pp. 326. New York: Liveright, Inc., 1932.

MODERN psychology is an exceedingly technical field. In psychology no performance of man is more interesting than habit. We live and we learn, but we are largely creatures of habit. Professor Dunlap points out that practically all of us awaken at a certain hour of the morning, but the reasons why we awaken, how we awaken and when we awaken are governed by various conditions in different persons. He discusses the principles of learning and the theories of learning as well as the process in learning in a most learned manner. By the time one has reached chapter eight, however, one has completed most of the difficult aspects of the book and has begun to reach portions of the greatest interest both as reading matter and as material of educational value. At this point the reader begins to learn about adjustment both personal and social, about the breaking of bad habits, about emotional response, learning ability and intelligence. There are special sections on stammering and problems of sex relationships which are thought-provoking and instructive. Of special interest is the section on forgetting, in which Professor Dunlap points out how wonderful it would be if we could forget a great deal of useless material that seems unavoidably to be stored up in our memories.

MORRIS FISHBEIN, M.D.

HARMONIOUS DEVELOPMENT OF WOMEN'S BODIES

By Alice Bloch. Translated by Mathias H. Macherey, Assistant Supervisor of Physical Education, Newark, N. J. Price, $3. Pp. 136. New York: Ray Long & Richard R. Smith, Inc., 1932.

THIS EXCELLENT work on gymnastics though addressed to the layman will be equally helpful to teachers. Following a chapter on the effect of gymnastics on the body and internal organs are chapters on orthopedic derangements, on posture and on breathing. The remaining chapters are devoted to lucid explanations of exercises in crawling, running, leaping, mimetics, developmental exercises for foot, leg, arm and trunk muscles, and the much needed loosening and relaxation exercises.

The book is illustrated with 150 photographs of the author's pupils, taken in the nude. The pictures thus show clearly the action of the various muscle groups involved in the exercise photographed but will undoubtedly limit the use of the book, at any rate in America.

In his translation Mr. Macherey has shown an expert's handling of his subject in his use of concise, nontechnical language.

The author does not claim to be the originator of these exercises. She states that she has incorporated or adapted those of the various so-called systems, notably the Swedish, which seemed to her to serve her purpose best. Her choice is well made, and she has thus materially enhanced the interest of a work which is one of the best that has come to us from Germany in recent years.

LILLIAN KLEIN.

TINY GARMENTS

By Cornelia Otis Skinner. Price, $1. Pp. 19. New York: Farrar & Rinehart, Inc., 1932.

THE TITLE of this book leads the reader to suspect the contents of being devoted to needlecraft or, at best, to a fashion study of the season's best dressed babies. However, this is not the case. Miss Skinner,

with the able assistance of a number of tumbling babies drawn by A. Winter, discusses a subject which is usually handled in the light of a mysterious and sacred event—that process of having a baby. She has delightfully brought out the humor that abounds in so many situations arising during those nine months. There could be no better place for this little book than on the waiting-room table in the office of a busy obstetrician.

FRANCES G. KLAN.

THE SEX TECHNIQUE IN MARRIAGE

By Isabel Emslie Hutton, M.D. Foreword by Ira S. Wile, M.D. Cloth. Price, $2. Pp. 160, with several illustrations. New York: Emerson Books, Inc., 1932.

THIS book has had great popularity in England. It is written by a woman physician in response to needs of her patients. In the introduction, Dr. Ira Wile describes the book as a clear, succinct, nonemotional, authoritative and conservative exposition of the practical factors involved in making marriage successful on the sexual level. That describes the book exactly. It is little, if at all, concerned with the moral, economic and social aspects of this intricate subject. It is primarily concerned with the conduct of the honeymoon and with the technic of the sexual performance. Another section concerns the instruction of girls as to their periodic functions and the hygiene of life at such times. A final chapter on birth control urges people to put trust in their physicians and to secure good advice.

M. F.

COMPLETE GEORGE WASHINGTON ANNIVERSARY PROGRAMS

By Alma Laird. Cloth. Price, $1.50. Pp. 167. New York: Noble and Noble.

LITERATURE in these days is becoming highly specialized. Here is an entire book on how to celebrate Washington's birthday, organized according to the eight grades of school, and offering for each grade educational material suitable to the children of that age. The book includes poems, plays, typical programs, pageants and similar contributions.

M. F.

QUESTIONS AND ANSWERS

Allergy

To the Editor:—I should appreciate information regarding angioneurotic edema (swelling of the face, with redness and burning). Are skin tests 100 per cent accurate or do some foods have a different effect on the skin when taken through the stomach? Can outside influences, such as feathers, tobacco, dust, or kapok, cause the edema? According to skin tests I am sensitive to these substances. Do feather pillows cause trouble by contact or breathing? If dust is causing the trouble what should be done? Can I be desensitized? Does this condition improve as one gets older? I am 20 years old and have had this trouble for several years. I have had skin tests and am now avoiding certain foods, also tobacco and feather pillows. For the past five months I have improved considerably, but I am still far from being cured. What should I do for a complete cure? Should I change doctors?

S. M., New York.

Answer.—Angioneurotic edema is one of the manifestations of the condition known as allergy. It is a sensitiveness to chemical substances, usually proteins, but in rare instances it is caused by a drug, or sometimes even by a physical change, such as heat, cold or light. It is a condition that has hereditary tendencies and is especially likely to be present in those who come from a family in which such tendencies, which include hay fever, asthma, eczema and food sensitivity, appear on both sides of the family.

Skin tests, as a rule, are dependable, but it is possible that some proteins may not react on the skin in the same way as they do when taken internally in the form of food.

It is quite possible for outside influences such as the ones mentioned to cause angioneurotic edema. These substances act when the finely divided protein substance from them is inhaled. If the patient is sensitive to feathers, the only thing to do is to have them removed from his environment. The same applies to other substances to which he may be sensitive. In some instances one can be desensitized and in others one cannot. The condition is not likely to improve as one gets older. For the past five months the inquirer's condition has been improved though not cured. He has already gone far on the road to such recovery as he may expect in the discovery of four substances to which he is sensitive. The fact that he is improving is evidence that he is on the right track. Perhaps the patient may be sensitive to other substances in addition to the ones named. He should by all means keep on with the treatment and should not change doctors.

Hodgkin's Disease

To the Editor:—My mother has what is diagnosed as Hodgkin's disease. She seems to be losing vitality slowly, and the swelling on each side of the neck is slowly getting larger. She is 63 years of age. The diagnosis has been made from blood counts but not from a piece of the gland or flesh. The condition first began to appear in September, 1929. She took x-ray treatments, but they seemed only to soften the glands that the doctors said were hardened. Can anything be done to cure this condition? Is there any other condition closely resembling Hodgkin's disease which is curable? Is it possible for me, her son, to contract the disease through any contact, cuts or abrasions of my skin and hers?

C. J. M., California.

Answer.—An individual 63 years old is not liable to have Hodgkin's disease in its classic type but is more liable to have one of the closely related forms of diseases of the lymphoid tissue which would be recognized only by examination of the blood.

In a person of that age who has had the disease for nearly three years and has been treated with x-ray alone, the indications are that recovery is now impossible. One should try to keep the patient cheerful and should also make her comfortable by the administration of sedatives or opiates or both, as conditions demand and the physician advises.

Patients have recovered or have been aided to recovery from Hodgkin's disease and many other manifestations of similar character. There is no evidence that the disease can be transmitted from one person to another.

Asthma—X-Ray Treatment

To the Editor:—For the last year my son, aged 6 years, has had asthmatic attacks with colds. I have had an x-ray picture taken of his chest; the examination shows that the glands around his heart are enlarged. Please advise me concerning x-ray treatments for asthma.

I. M. A., California.

Answer.—Asthma is a disease which has a complicated background. The symptoms are plain enough, and in most cases the relief of individual attacks is not particularly a difficult matter, but treatment for the elimination of the disease, is not so simple.

Asthma is one of the group of diseases referred to as allergic. This means that the patient has a sensitiveness, sometimes from birth, sometimes developing later, toward substances, usually protein, in the diet or the environment. Hay fever is closely related to asthma, as are certain forms of eczema and the attacks of hives that certain people get when they eat a particular kind of foodstuff. The dandruff of animals and the pollen of plants are sometimes responsible for asthma, as is proved when cases are cured, for example, by dispensing with the family cat, removing a particular piece of furniture or eliminating a certain food from the diet. These reported results appear to be simple, but they are frequently the result of long, patient and persistent search for the cause. There are many hundreds of substances which may be responsible for the asthma, though some, like ragweed, are more common than others.

As to the enlarged glands in the chest, these may or may not be responsible for the asthma. A Mantoux tuberculin test may be done in addition to the x-ray examination. There is a gland in the chest known as the thymus which sometimes is enlarged and which is distinctly benefited by treatment with the x-rays. A physician should determine whether or not the x-ray treatments are indicated.

If you have a question relating to health, write to "Questions and Answers," HYGEIA, enclosing a three-cent stamp. Questions are submitted to recognized authorities in the several branches of medicine. Diagnoses in individual cases are not attempted nor is treatment prescribed. Anonymous letters are ignored.

Tuberculosis Vaccine for Children

To the Editor:—Dr. Frederick Tice and Dr. Allen Hruby of the Municipal Tuberculosis Sanitarium urged over the radio recently that there is a new tuberculosis vaccine for children of tuberculous parents which makes these children immune to tuberculosis. They called this the B C G vaccine, claiming that extensive experimentation on hundreds of children and animals has proved the value of this treatment. I once read that a French physician, Calmette, concocted such a serum, but that it proved a fatal proposition in Germany. I was also told by a pediatrician that the American Medical Association did not support this treatment. I am now in a tuberculosis sanatorium, having been with my children for a year until I learned that I had tuberculosis. My son, aged 3½ years, gives a positive reaction to the tuberculin test, showing a much milder reaction every quarterly examination. My daughter, who is 8 months old, does not react positively and appears to be in splendid condition. Is this new tuberculosis preventive for children a safe, harmless and dependable serum, such as toxoid is in diphtheria? Would you advise that my babies receive it? If so, what doses should be given for the boy, 3½ years old, and the girl, 8 months old? Is this serum the same as the Calmette serum, or is it an improved idea? After fifty years of research, do you believe that the next five years will produce a serum that will end the tuberculosis scourge, so that pneumothorax and surgical procedure can be done away with, or at least so that those with an early case who do not require these treatments can avoid spending a year or possibly more in a sanatorium? J. D., Illinois.

Answer.—At the present time there is no preventive of tuberculosis, either by means of living attenuated tubercle bacilli or by means of any preparation made from them, which could be classed as harmless and dependable. Much work has been done both abroad and in this country, but it is too soon to say that any considerable number of the treatments will confer a lasting immunity. Many which give early positive reactions later again become negative.

With the present limited knowledge of what is to be expected, I should not advise the baby's receiving it.

The preparations which are now in use are made from the original Calmette culture. They are given in two ways, either by mouth or by hypodermic injection.

No one can answer as to what may be expected in the next 5 years in the way of treatment either for tuberculosis or for some of the other diseases. Medicine has made tremendous strides, and much is to be hoped for in the way of future development of knowledge over the present.

Milk

To the Editor:—When a child has an idiosyncrasy against milk, so that milk in any form in any appreciable quantity causes eczema, what substitutes are there to insure good teeth and consistent growth? For the first five and a half years of her life our daughter consumed plenty of milk, while we were baffled in every attempt to cure the eczema, which made great cracks at the lobes of her ears and continual running sores. At last a skin specialist told us to try a milkless diet, and in less than a month the eczema was healed. Ever since that time (a year and a half ago) it has been necessary to avoid milk drinks, cereals with milk, cream sauces, custards, butter and cheese in her diet. The little milk there is in cakes and cookies does not seem to matter, but I have tried gradually to increase the amount of milk in her diet from time to time. Such experiments are invariably followed by patches of eczema in the armpits and sometimes in the groin as well as on the face and under the ears. Her first teeth were slow in appearing but were well spaced and absolutely perfect. She is now 7 years old and has six permanent teeth in front, but the six year molars are not yet through. She is less nervous now than ever before and seems in perfect health, but she has grown only 1½ inch during the last year. If the lack of milk is retarding her growth and is liable to affect her teeth, I want to find whatever substitutes she should have for the milk. Since all our drinking water must be boiled, should we use lime water to replace the lime?

B. H. H., South America.

Answer.—Whereas most children require some milk in their diet for proper growth and development, experience has shown that children are occasionally encountered who, although their diet has not contained milk, have shown a perfectly normal development and nutritional condition.

At the age of the child referred to in the inquiry, retardation of growth may be the result of a hereditary tendency or of a type of glandular insufficiency and not the result of lack of milk in the diet.

Eczema is sometimes an allergic reaction to milk in the form it is given and may be overcome by using a nonallergic fat-free milk, such as is now available on the market, which might be nonallergic in this child. This same allergic reaction might be overcome by feeding such milk in doses of 1 drop diluted with 1 ounce of water for a number of days and increasing this gradually a drop every few days until the child can, after months of gradual increase, take whole milk. Desensitizing the child by injection of various milk proteins is another method. Either of these treatments, of course, would have to be given by a physician. In infants, preparations of soy beans are also used to supply the infant's requirements.

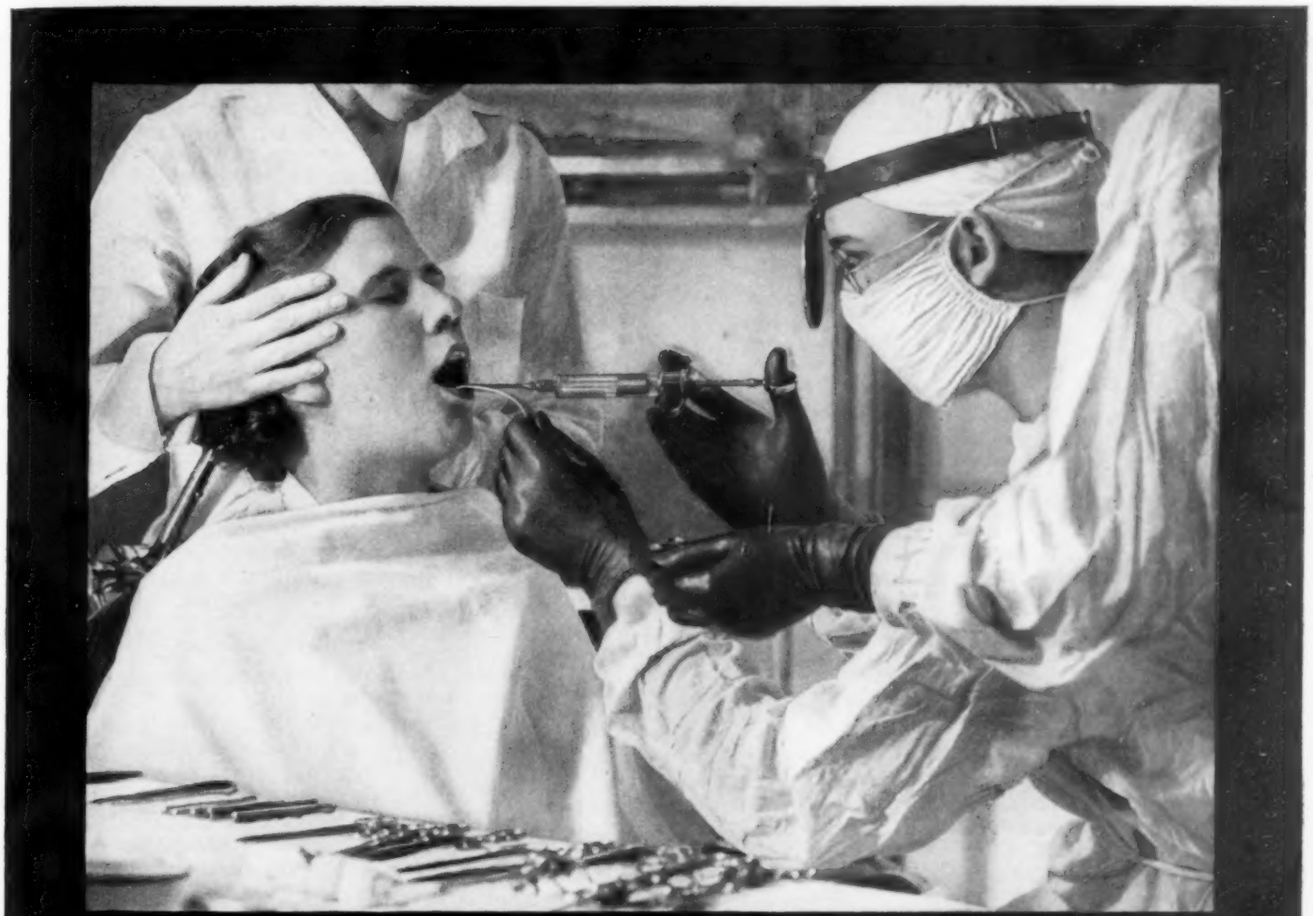
In replying to the question as to the addition of lime water to the drinking water, it would be far better to give the child calcium in other forms, such as her doctor may order. Little if any effect would be derived from the use of lime water added to the drinking water.

Eyes—Glasses

To the Editor:—I am 23 and have worn glasses for five years. At the time of my examination, my left eye was normal while my right was a good deal far-sighted with slight astigmatism. With present correction my eyes are both 20/15. Will not such a strong lens on my normal eye gradually and permanently injure it? This eye bothers me a good deal. My right eye gives me discomfort in distant vision. My eyes are often glassy and unhealthy looking. Dull pains make turning the eyes a discomfort. Would not a partial correction for my right eye and a plain glass for my left be more satisfactory, or would double lenses afford more eye ease? Is it too late to change? W. W., Texas.

Answer.—Before much was known about glasses the fear of getting them too strong was common. Since more has been learned about the help they can give, it is known that there is no danger from that source. Now that most people read, write, sew or do close work, far-sighted eyes are a serious handicap. If the inquirer works outdoors, on a farm or in a quarry, he may not need glasses for such work. But to study, read, sew, or follow any one of a hundred indoor pursuits, full correction of the far-sightedness and astigmatism gives the best chance of working without strain or harm to the eyes. It is likely that in five years the eyes have changed, so that the glasses no longer suit them. The eyes should be examined and measured again and suitable glasses procured. Glasses that are a full correction for each eye will give the most help. The inquirer is not old enough to require double-focus glasses.

Another Great Hospital Uses It —



IN THE CHRIST HOSPITAL, CINCINNATI, HEXYLRESORCINOL SOLUTION S. T. 37 IS SPECIFIED DAILY IN NOSE AND THROAT CASES

Stronger than Carbolic Acid in any Usable Solution, yet Safe even if Swallowed . . .

THE new Christ Hospital in Cincinnati is another of the country's great hospitals which use and recommend the modern antiseptic, Hexylresorcinol Solution S. T. 37 (1:1000).

In this new and splendidly equipped hospital, Hexylresorcinol Solution S. T. 37 appears daily on the doctors' "required list." It is used by one noted surgeon here, without exception, in antrum and sinus cases.

PROTECT YOURSELF, in your own home, at the very start of nose or throat irritations, with the same effective antiseptic.

It's stronger than carbolic acid in any usable solution! Yet it is so safe, no harm is done if you accidentally swallow it. It has the advantage of spreading more rapidly and more deeply than many other antiseptics into the crevices of wound tissue and mucous membrane.

The moment your throat feels sore, gargle with Hexylresorcinol Solution S. T. 37 and consult your doctor. You can dilute this antiseptic three times without destroying its germ-killing power.

Pour it at once into open wounds, cuts, and scratches. It will not sting or burn even when used full strength.

Buy a bottle today—and keep it where your children can use it, too.

The Seal of the Council on Pharmacy and Chemistry of the American Medical Association should serve as an indication of its trustworthiness.

At all drug stores, at the new, reduced prices —50¢ and $1.00. Slightly higher in Canada.

— Use this safe effective antiseptic in your own home

ACCEPTED AMERICAN MEDICAL ASSN

Mail coupon today

SHARP & DOHME, Dept. G-7
640 No. Broad St., Philadelphia, Pa.

I enclose 10¢ in stamps, to cover cost of mailing and handling, for which please send me a generous-sized complimentary package of Hexylresorcinol Solution S. T. 37.

*Name*_____

*Address*_____

Good Inexpensive Food

EVEN when money is plentiful it is not an easy job to buy food and to plan meals for all the hungry members of one's family. When it is not plentiful, the problem becomes increasingly difficult.

To meet a nation-wide need, nutrition experts have prepared a new booklet which names the various foods that must be included in daily menus in order to have properly balanced meals. It tells how to buy the most for your money—and the best for your money.

Delicious, nourishing food is not necessarily expensive. But it takes thought to plan economical meals which provide pleasant variety from day to day.

With the help of this booklet, you can plan meals which not only will maintain health and strength, but also will please the appetite. You can have the advice of food experts. They will tell you which foods are of first importance—how much milk, what amounts of vegetables, fruits, bread and cereals are desirable and what proportion of meat, eggs, fish, fats and sugars should be added to the menus.

It has been demonstrated that, both in the cities and in rural districts, food for every member of the family for an entire week—twenty-one meals—can be bought at a cost of about $2.00 for each member.

In the booklet "Three Meals a Day" are described appetizing and nourishing menus for breakfast, lunch and dinner for seven days at a cost of only $6.00 for three persons. Additional menus are suggested at slightly higher costs. The booklet includes market orders specifying the exact amounts of food to buy for these menus. You are cordially invited to send for your free copy. Address Booklet Department 2-G-33.

Metropolitan Life Insurance Co.
1 Madison Avenue, New York, N.Y.
Dept. 2-G-33

Please send me your free booklet, "Three Meals a Day."

Name.....

Address.....

City.....

State.....

METROPOLITAN LIFE INSURANCE COMPANY
FREDERICK H. ECKER, PRESIDENT
ONE MADISON AVE., NEW YORK, N.Y.

© 1933 M. L. I. CO.

Dementia Praecox

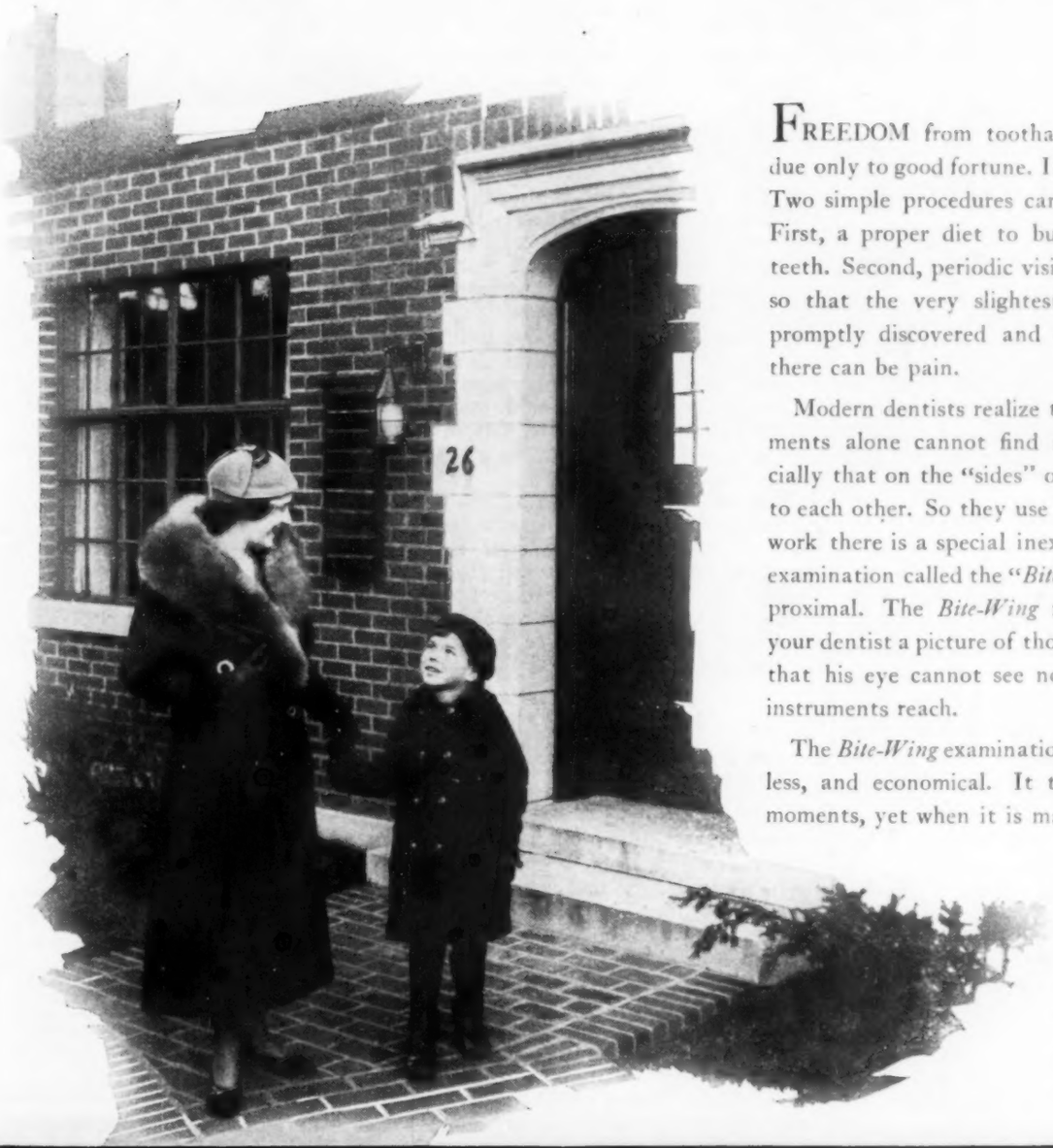
To the Editor:—My wife is suffering from dementia praecox. The doctors at the hospital have suggested that I permit her to be subjected to the prolonged sleep treatment, said to have originated in Switzerland. They have asked me to sign an agreement releasing them from liability in case of bad results. Please tell me what this treatment is, whether there is great danger and also whether it is likely to bring about a cure.

A. G., Illinois.

Answer.—Prolonged sleep as a method of treatment in cases of dementia praecox is based on the observation that, on first waking after the administration of certain sleep-producing medicines (which have been used also as anesthetics for surgical operations) and some other procedures, the patients often show a more or less brief period of practically normal mentality, during which they may converse freely, without signs of the mental illness, and will eat normally. These periods usually do not last more than from a few minutes to an hour or so, when the patient gradually lapses back into the mental state that was present before the sleep. While various suggestions have been offered to explain these observations, the plan has been carried out of giving repeated doses of the medicine so that the patient is kept asleep much of the time for a period of days. During the periods of waking, when the patient is more normal, efforts are made to understand him and his problems by talking them over with him. In some cases there is a gradual improvement in the mental condition.

The dangers connected with the procedure are not serious. Occasionally the medicines used cause upset of the heart action when administered, but this danger is small when certain precautions are taken in the examination of the patient and the manner in which the medicine is administered. A few fatalities have occurred, more particularly in the earlier days of the application of this method, but the proportion is exceedingly small. The principal reason why the hospital asks for a release from responsibility is that the procedure is still regarded as experimental in the sense that good results cannot be predicted in any particular case and there is the small element of risk already mentioned. The remedy itself does not cure, but it does sometimes seem to open a door to a better understanding of the patient and by the patient, from which may grow some definite improvement.

Headed for a Lifetime *without a* Toothache



FREEDOM from toothache no longer is due only to good fortune. It can be planned. Two simple procedures carry out the plan. First, a proper diet to build strong, hard teeth. Second, periodic visits to the dentist so that the very slightest decay can be promptly discovered and cared for before there can be pain.

Modern dentists realize that their instruments alone cannot find all decay—especially that on the "sides" of the teeth next to each other. So they use x-rays. For such work there is a special inexpensive type of examination called the "*Bite-Wing*" or interproximal. The *Bite-Wing* radiographs give your dentist a picture of those tooth surfaces that his eye cannot see nor his examining instruments reach.

The *Bite-Wing* examination is simple, painless, and economical. It takes but a few moments, yet when it is made once a year, you and your dentist are assured that no decay has escaped detection and the care that prevents pain.

HAVE AN ANNUAL HEALTH AND X-RAY EXAMINATION

Send this coupon or write for a free copy of the new booklet, "How to Prevent Toothache."

EASTMAN KODAK COMPANY, *Medical Division*,
345 State Street, Rochester, N. Y.

Gentlemen: Please send me a free copy of the booklet, "How to Prevent Toothache."

Name .....

No. & St. .....

City & State .....

"I haven't time to finish breakfast, *Mother*"

HOW many times have you heard this cry—and then sorrowfully watched your child rush off to school improperly nourished? How you worry all morning.

Avoid this feeling by giving him a cup of warm Horlick's Malted Milk for breakfast. He'll love it, probably take a second cup. It supplies both heat and energy. Then when he plunges off to school you'll know that he will feel great all morning. For Horlick's, in addition to containing rich, whole milk, has valuable essential elements of wheat and malted barley. Thus your child gets a well-balanced food containing important minerals of calcium and phosphorus, carbohydrates, valuable proteins and vitamins A, B and G.

Try this way, Mother, and watch the results. Your druggist has Horlick's in natural and chocolate flavors.

ACCEPTED AMERICAN MEDICAL ASSN. Committee on Foods

Children love their breakfast foods when sprinkled with Horlick's, adding both flavor and nourishment.

Horlick's

The Original Malted Milk

HORLICK'S MALTED MILK CORP.
Dept. H-18, Racine, Wis.

Please send me.....weight charts for preschool children and.....charts for school children for recording by a graph the weight progress of individual children.

.....

.....

.....

Congenital Family Amaurosis

To the Editor:—Do you know of a hospital, clinic or physician in the United States prepared to treat and perhaps cure a baby, 10 months old, who has congenital family amaurosis? Do you know of any possible cure or any research that is being done on this disease?

C. L., Washington, D. C.

Answer.—It is unfortunate that a more specific term has not been used to designate the baby's ocular disease, for there are a number of ocular conditions or diseases that might be so designated. Judging from the age of the patient, it is probable that the condition referred to is Tay-Sachs disease or the so-called amaurotic family idiocy.

The defective vision is simply one manifestation of the disease; there also exist well marked degenerative changes in the brain and spinal cord. An infant so affected can be properly cared for at any first class hospital or by any competent neurologist. The condition is incurable and is invariably fatal at an early age. We do not know of any research pertaining to this disease that is being carried on at the present time.

The information given refers to the infantile type of the disease, but there is also a juvenile type that recently has been studied thoroughly by Torsten Sjögren of Sweden. A review of the work can be found in the *Archives of Ophthalmology* (**7**: 819 [May] 1932).

Headache

To the Editor:—Information is desired about headache.

C. E. V., Illinois.

Answer.—Headache is not a disease but a symptom, which means that headache is merely a signal that something is wrong somewhere. Treating headache as such is always a mistake. The first step must be to search for the cause. This can be done only by a physician, through a complete examination and perhaps additional study by laboratory methods. Some of the common causes of headache are eyestrain, digestive disturbances (so-called biliousness), constipation, disease in the nose or the sinuses communicating with it, infections in various parts of the body (for example, the teeth) or acute infections like colds and influenza. Rarely there may be serious conditions, such as brain tumors. There is also a type of headache known as migraine, which is a condition in itself. Dosing a headache with drugs is worse than useless.

"I'm having a fine winter, thank you!"

THIS husky little champion is just over a year old. He has enjoyed a winter of health. His teeth are coming in fine. He gains weight regularly. And he has the disposition of an angel!

Lucky? Perhaps . . . but his mother has been extremely careful. Ever since her doctor told her to, she has been giving her baby daily doses of Scott's Norwegian Cod Liver Oil. There's vitamin A in Scott's Cod Liver Oil, which, in children and adults alike, helps build resistance to common infections. And there's vitamin D, to assist in growth, help insure good, strong teeth and straight, sturdy bones.

Three-teaspoonfuls-per-day★ of ordinary cod liver oil has been found the necessary medicinal dose. *But two teaspoonfuls daily★ of Scott's Cod Liver Oil yields a higher vitamin intake than this three-teaspoonful dose of ordinary cod liver oil.* Yet Scott's Cod Liver Oil is cheaper. . . . Available at all drug stores in three convenient sizes at 35c, 60c, and $1.

★ SCOTT'S TWO-SPOONS-A-DAY
Efficient and Economical

THE Council on Pharmacy and Chemistry of the American Medical Association has determined that the average prophylactic and curative dose of cod liver oil is one teaspoonful (4 c.c.) three times daily. This assumes an oil of such potency that 4416 U.S.P. vitamin A units and 1468 A.D.M.A. vitamin D units are taken daily.

As compared with this, Scott's Norwegian Cod Liver Oil has extra-potency (1000 U.S.P. vitamin A units and 250 A.D.M.A. vitamin D units per gram). Therefore two teaspoonfuls taken daily yield a total intake of 7360 U.S.P. vitamin A units and 1840 A.D.M.A. vitamin D units.

SCOTT'S NORWEGIAN COD LIVER OIL

PLAIN AND FLAVORED

Made by Scott & Bowne, Bloomfield, N.J. *Sales Representatives,* Harold F. Ritchie & Co., Inc., New York City

ACCEPTED AMERICAN MEDICAL ASSN.

Follow the newest dietetic advice:

Start or end one meal a day with

CANNED-PINEAPPLE

Have you begun the daily serving of Canned Pineapple yet? It is the new way of adding *many* useful substances to the diet.

Research has shown that this one delightful and inexpensive fruit contributes a great number of known dietetic values. Canned Pineapple may be classed as one of the most valuable fruits.

It is a good source of vitamins A, B and C. A single serving has been shown definitely to raise the alkaline reserve of the blood for at least two hours. Canned Pineapple contains notable amounts of iron and copper—recognized safeguards against nutritional anemia. And in addition to these important factors Canned Pineapple has numerous other important nutritional values.

The proper amount is two slices, or the equivalent as a Pineapple Cup of crushed or tidbits. Serve it this way for an appetizer or a dessert. Or eat Canned Pineapple in salads, with meats, or other main courses. Serve it at any meal of the day.

Remember, these statements apply to *Canned* Pineapple. Canning processes cause a beneficial dietetic change.

Educational Committee

PINEAPPLE PRODUCERS COOPERATIVE ASSOCIATION, LTD.
100 Bush Street
SAN FRANCISCO, CALIFORNIA

Copr. 1933 by Pineapple Producers Cooperative Association, Ltd.

Here's how doctors and nurses keep their hands fit in Winter!

They dry hands thoroughly and use a *little* Nivea Creme* after each washing, or before going out. They rub in the creme well.

Don't let these cold days chap and crack the skin of your hands and face. Keep a tube of Nivea Creme handy, and rub in well. Nivea doesn't interfere with your work because it leaves no after-greasiness.

Good for babies and children, too. The 25c and 50c tubes are sold by all druggists—10c tubes at the Five and Ten Cent Stores.

Mail the coupon for your free tube.

NIVEA CREME

* Trade Mark Reg. U. S. Pat. Off.

P. Beiersdorf & Co., Inc., Dept. H-2
200 Hudson St., New York, N. Y.

Please send me without charge a trial tube of Nivea Creme.

Name.....

Street.....

City.....State.....

Carbon Tetrachloride

To the Editor:—I recently noted an article in the *Journal of the American Medical Association* concerning the dangerous effects of carbon tetrachloride on the human body. I am working in a dry cleaning plant in which this chemical is used as a solvent, and I find that I have the early symptoms just as the man whose case was cited in the article, although I have only been working with the chemical a short time. The issue has arisen as to whether or not the solvents should be changed. The plant has considered trichlorethylene, and I should like to know whether this chemical has any dangerous effects on the body. I am anxious to change to a safe cleaning solvent. R. O. R., Tennessee.

Answer.—Trichlorethylene is a chemical similar in its action on the human body to carbon tetrachloride. For practical purposes, no differences in dangerous properties indicate the use of one in preference to the other. Both of these substances are closely related to chloroform. In any extensive dry cleaning work, it is never safe to use either of these agents except in closed dry cleaning machines or in the presence of excellent ventilation. A pint of either carbon tetrachloride or trichlorethylene, allowed to evaporate in a small close room, might lead to disaster. Long exposure to such a concentration will almost inevitably produce damage to the body.

The cost of these chlorinated hydrocarbons is so high that free use in open containers is prohibited by ready loss through evaporation. This is fortunate, in that resort to closed systems or other and less toxic cleaning agents is promoted. At the present time and in the absence of cleaning machinery that prevents the escape of all vapors or fumes the safest dry cleaning agent is a fraction of naphtha with a high boiling point, for it does not evaporate as readily as carbon tetrachloride, trichlorethylene, benzene or benzine. It is not to be understood that naphthas are nontoxic; they are merely less volatile. Dry cleaning agents sold under trade names rather than under chemical designations may consist of carbon tetrachloride or other chlorinated hydrocarbons. Several such commercial products are known to be mixtures of several cleaning chemicals, which are all harmful and call for caution in their use.

Many people are digging their graves with their teeth.—*American Dental Association.*

Children Like to Dress Themselves with Vanta Self-Help Garments

LITTLE folks like to be independent . . . to do things for themselves.

Mothers who provide Vanta Self-Help Garments for their two to six year olds develop resourcefulness and judgment in their children. These wonderful garments (shirts, waists, sleepers, union suits and training panties) are so scientifically constructed that the average child of two years soon learns to dress himself.

Teach Your Child Resourcefulness

Here is why Self-Help Garments not only save your time but also develop the mind of your child:

A red Valentine heart label, attractive to the child, *always* marks the front and outside of every garment, guiding Baby when he dresses himself.

Buttons and buttonholes are made especially for Toddler's fingers.

One front button—always within reach—controls the opening and closing of the seat . . . a great convenience. (See illustration.)

Vanta Self-Help Garments are comfortable, permitting freedom and natural movement of the body. They come in a variety of weights and in sizes 2 to 12 years. Made of the finest soft, pliable, durable knitted fabrics. They cost no more than ordinary garments of equal quality.

Be sure to see Vanta Self-Help Garments at your favorite department store. Or write Earnshaw Knitting Company, Newton, Mass., for the name of your nearest dealer.

A Wonderful Booklet—FREE

Dept. H. 2.
Earnshaw Knitting Company,
Newton, Massachusetts.

Please send me without charge of any kind free copy of "The Toddler" which covers "the neglected age" from two to six years. Tells how to train my child to be resourceful rather than dependent upon others.

Name.....

Address.....

City.....State.....

FORTY YEARS OLD—OR FORTY YEARS YOUNG

(Continued from page 151)

apoplexy and kidney disease, it is seen that the chances of living beyond 40 depend largely on how well the arteries wear.

Medical science teaches more and more about the care of the body and is every day affording more protection from enemies in the invisible world so that the baby born today has many more chances of reaching maturity than the baby of previous years. These are great accomplishments of medical science, but the work is not finished.

Sheltered as man is by what one might call biologic hothouse methods, he crosses the threshold of 40 and finds that on the average he cannot expect to live as long as his forefathers because his arteries are not holding out. He turns to the student of human arteriosclerosis and demands an explanation, but if the student is from experience and training entitled to an opinion, one finds him extremely modest. He is presented with the most perplexing and the most important unsolved problem in the field of medicine today. Finding that he has no dogmatic answer to the question, shall one press him further and say, "Well, what do you think?" He may reply that perhaps the wear and tear of living, the ravages of the aging process, those changes in environment incident to modern civilization may play a rôle, but sooner or later one will find that he is more concerned about the influence of heredity on the wearing quality of the arteries. His advice is not to get too excited about the increase in vessel disease, because people are living longer today than ever before. He may say in passing that this is also an important factor in the increasing number of persons dying of cancer. More persons are reaching the involutionary period of senescence, and deterioration of the arteries appears to be a rather favorite way of Nature to be rid of man when his biologic responsibilities have been fulfilled. Therefore, a natural increase in the number of deaths from arteriosclerosis may be anticipated. Man must die of something. Few of us like to face the cold fact that Nature has just one interest in us as individuals in this tragicomedy called Life, and that is that we propagate our kind. When this kind has reached the age when it is ready to strike out on its own, Nature is apparently more interested in getting rid of the older ones than in keeping them here, in order that they may not clutter up

(Continued on page 182)

TEK FITS... *just like this behind your front teeth...*

• • •

A tooth brush must prove itself to be fit for your teeth. This familiar photograph shows in a graphic way how Tek fits behind your front teeth. The sharp curve formed by your thumb and forefinger is almost exactly the same as your dental arch.

Tek's *Better Shape* makes it out-perform misfit brushes. Tek's laboratory-selected bristles outlast ordinary bristles.

Sterilized, Cellophane-sealed, guaranteed. Tek is 50¢; Tek Jr. for children, 35¢.

Johnson & Johnson
NEW BRUNSWICK NEW JERSEY

Tek
the modern
TOOTH BRUSH

FOR RESULTS LIKE THIS

you need

Full Strength DAVIS BAKING POWDER

Davis Freshness is Sealed in Air-Tight Moisture-Proof Can

Accepted by American Medical Association
(Committee on Foods)

DAVIS BAKING POWDER *cannot* lose any of its leavening strength before it reaches you! When you open a can (always easy-to-open) of Davis Baking Powder it is just as fresh and full of *raising strength* as the day it was packed. Davis full-raising strength is *sealed in!*

That's why—*for 53 years*—the best biscuits, pie crusts, cakes and hot breads in the country have been made with Davis Baking Powder.

This Seal of Acceptance is your guarantee of the unquestionable purity of a product and the truth of its advertising claims.

It costs less, too! And the easy-to-open, easy-to-close cover that prevents wasteful spilling also makes Davis Baking Powder more economical.

Try Davis today. Insist on this famous brand of baking powder. You'll never want to use any other. Buy a can now!

DAVIS
BAKING POWDER
R. B. Davis Co., Hoboken, N. J.

FORTY YEARS OLD—OR FORTY YEARS YOUNG

(Continued from page 181)

the place for the oncoming generation. Therefore the time that man survives, certainly after 50, is, from a biologic standpoint, borrowed time. From then on, he must watch his step, with full knowledge that Nature is becoming increasingly unconcerned with his welfare.

As proof for this assertion, I refer briefly to the work of Dr. Todd, professor of anatomy in the Western Reserve Medical School. He has found that age is written in the bones. Up to about 45 there are definite and orderly changes in various bones corresponding to the age of the individual. Studying the skeleton of the earlier decades of life, one may ascertain within a few years the age at which the individual died. After 45, however, methods fail. The bone changes no longer obey the rules. Nature apparently has been much interested in man, even in his bones. She takes him over an orderly path to the top of the hill of about 45 years, then dumps him off, having little concern with the route he takes down.

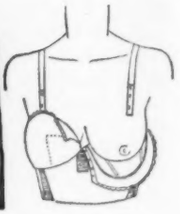
"You are old," said the Youth, "one would hardly suppose
That your eye was as steady as ever;
Yet you balanced an eel on the end of your nose.
What made you so awfully clever?"

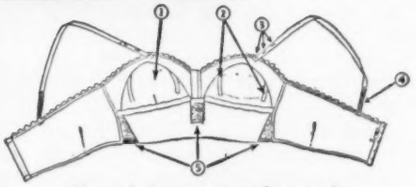
Though I cannot subscribe to an overarduous balancing of eels, Father William's response might well be modernized as follows: First, and most important, make a judicious choice of your parents; then use all the knowledge you now possess in the care of this most complicated and delicately balanced machine known to man—the human body. Select with great care the one you allow to tamper with it when it gets out of order. Drive carefully, obey known traffic laws, and watch the speedometer. As the mileage mounts, know that you cannot buy a new machine or replace any worn parts. Safety lies in slowing up. Let those with obsolete models not try to outdistance the Rolls Royce ahead or even to catch up with it. By keeping well to the right we have a fair chance of reaching the next town, aye and the next, with a pleasant journey on the way. Let us not bewail too much the minor handicaps, rheumatism or dyspepsia, for they may save us a

(Continued on page 183)

Maiden Form
NURSING BRASSIERE

This brassiere aids in preserving the natural breast contours during and after the nursing period. It is back-fastening, with an extra front opening for nursing. Note these special features: (1) Form-fitting fulness for support without pressure; absorbent shields, with rubber lining that cannot touch skin; (2) Holders for pads of sanitary gauze; (3 and 4) Adjustable shoulder straps; (5) Ample elastic gussets. Of flesh porous mesh, $1.50.





If your dealer can not supply you write
MAIDEN FORM BRASSIERE CO., Inc.
245 Fifth Avenue, New York

Even the Little Ones

Often they too need surgical supports—but adapted to tender tissues. This one wears an inguinal-umbilical hernia binder (No. 37), made by Camp for infants under walking age, in small, medium and large sizes. Pads in various sizes are also furnished. Attached straps pinned in front regulate degree of tightness.

Write for special information

CAMP
Physiological Supports
S. H. CAMP AND COMPANY
Manufacturers, JACKSON, MICHIGAN
Chicago
1056 Merchandise Mart
New York
330 Fifth Avenue

Try Shopping Among HYGEIA Advertisements

THUMB SUCKING
Quickly and Safely Stopped by Most Approved Means
SAFETY THUMB GUARDS
Send $1.75 for a pair with full directions. State Age of child. Satisfaction guaranteed or money refunded.
The Safety Thumb-Guard Co.
Dept. H, New Haven, Conn.

A better Cereal for baby

GERBER'S Strained Cereal eliminates all uncertainties — assures utmost uniformity in feedings. It is made of finely ground whole wheat and hulled oats with added wheat germ for vitamin B. Cooking in whole, fresh milk increases both its palatability and nutritive value. Straining removes the coarse bran particles after their food value has been extracted — and gives a smooth, uniform texture. Unseasoned — thoroughly cooked — ready-to-serve. Simply warm to feeding temperature, serve as it is, or season as baby's doctor directs.

Better Vegetables for Baby

Gerber Vegetables are cooked by methods which conserve the valuable vitamins and mineral salts usually lost in home cooking. They are strained through fine monel metal sieves. Every possible safeguard is used to give baby the whole value of the freshest garden vegetables — in a form most acceptable to baby's needs. Gerber's Strained Vegetable Products are unseasoned — ready-to-serve — always uniform — safe — economical — always better for baby.

Ask your Doctor

He can tell you which of Gerber's eight strained vegetable products are most desirable for baby. He can also advise you regarding the frequency and quantities of feedings with Gerber's Strained Cereal.

Send Coupon for Sample

If your dealer cannot yet supply Gerber's Strained Cereal, send his name with 10¢ for mailing costs; and we will send you one full-sized can of cereal for trial.

ACCEPTED AMERICAN MEDICAL ASSN.

Strained Cereal
10¼ oz.

Strained Green Beans
Vegetable Soup — Peas
Beets — Carrots — Prunes
Tomatoes — Spinach
4½ oz. cans

15¢ at Grocers and Druggists

Gerber's
STRAINED CEREAL
Long Cooked in Milk

GERBER PRODUCTS COMPANY, Fremont, Mich.
(*In Canada*—FINE FOODS OF CANADA, LTD., Windsor, Ont.)

Enclosed find 10¢ and my dealer's name for which send me your introductory offer of one full-sized can Gerber's Strained Cereal.

Name.....
Address.....
Dealer's Name.....
Dealer's Address..... M-6

FORTY YEARS OLD—OR FORTY YEARS YOUNG

(Continued from page 182)

crash. Let us remember, too, that we have been given greater brain power as compensation for our rather undistinguished bodies. Let us take proper pride in it and make it serve us to the utmost. Many a brain, to its glory and pleasure, has made a sickly shell serve with distinction. Furthermore, if we can occasionally so forget the ego as to attain the racial point of view, then let us hope, rather than lamenting for ourselves, that there may some day be a happy combination of the primitive and the present wherein our descendants may flourish.

It is not within my province, though to be sure in a sense a legitimate aspect of my subject, to suggest spiritual compensations. There are few fighting death after 40 who do not hope to balance the scales somehow, with distraction, resignation, future hope and present selflessness. This is the minor accompaniment of that oldest unfinished epic, "The Life Quest." According to your individual mental needs, you will find what best satisfies you. There will always be the water-wings of religious dogma for those not quite hardy enough to swim out into spiritual waters alone. On the other hand, there is the pleasant sandy shore for the less restless, perhaps more fortunate ones, who are content with a purely materialistic existence. And there is the far horizon of the unknown on which every one may rest his gaze.

"I have answered three questions and that is enough,"
Said his father. "Don't give yourself airs!
Do you think I can listen all day to such stuff?
Be off, or I'll kick you down stairs."

We have found only a little honest tallow in the ointment of Father William. And you see that in the end, he was forced, rather than to make unjustified claims, to beg the issue with some brusqueness. With so admirable a model as he, I deem it judicious to avail myself of a like prerogative.

It would be of benefit to our souls if we teachers would take time enough each day to ask ourselves whether we have destroyed any ambitions, engaged in unjust criticisms, humiliated or belittled a sensitive child, embittered any one in our charge by the use of sarcasm or made one of them the butt of a joke.—*The Indiana Teacher.*

"Feed a cold and starve a fever?"

NO...BETTER NOT!

Safest thing is to call the doctor if your Taylor clinical thermometer says "Fever"

"STOP—LOOK—LISTEN" whispers a fever—a whisper to which you can't afford to be deaf. For fever is always a danger signal, warning of trouble ahead. Tuck a Taylor Fever Thermometer under the little tongue the first moment you suspect a rising temperature. That way you may avoid the cold—you may forestall the sickness. Certainly if you follow the old saying and "Feed the cold" you are likely to produce and have to starve a fever!

Surely no home with children about it, should be without a Taylor Fever Thermometer. Doctors, nurses and many parents too use them every day. There are Oral and Rectal types. Every thermometer with the name Taylor upon it is guaranteed accurate. Ask to see them at your favorite druggist's and look for the name "Taylor." Taylor Instrument Companies, Rochester, N. Y., and Toronto, Canada.

THE FEVER THERMOMETER illustrated is known as No. 5002 and comes in a convenient case. Price $2.00.

Taylor INSTRUMENTS

Prices slightly higher west of Mississippi and in Canada

TEETH REQUIRE GOOD CARE BEFORE AND AFTER BIRTH

"To have good teeth requires not only that we eat the proper foods that help to build and preserve them, but also that we give them the proper care after they come through the gums.

"Brushing the teeth keeps the mouth sweet and clean. The teeth should be brushed each morning and night, and if possible, after each meal. The night brushing is considered the most important. The mouth should be thoroughly rinsed after each brushing.

"In choosing a dentifrice, do not be misled by the extravagant claims made by some manufacturers. *Dentifrices have no purpose beyond helping to clean the teeth.* They cannot cure or prevent specific diseases of the teeth and gums, and any such claims are fraudulent. A *safe* dentifrice has not the power to prevent pyorrhea; nor has it the power to neutralize mouth acids except during the few seconds it may be in the mouth or to destroy more than a few germs. Dentifrices which are specially designed to whiten teeth usually contain chemicals which cause irreparable damage to the enamel and should be avoided.

"The teeth," continues an article, "Food, the Teeth and Health," in *The Mouth Health Quarterly*, "should be examined at regular intervals (at least every six months) by the dentist. A child should begin visiting the dentist for examination and care at not later than three years of age. Many parents seem to think that this attention is unnecessary. They take their children to the dentist only after cavities have developed. This is a serious mistake, for proper dental care begun in early childhood will help to keep the teeth strong and sound and avoid unnecessary expense later. The *preventive* treatments necessary when a child visits the dentist regularly are usually so slight and painless that the youngster loses any fear of going to the dentist, and soon comes to regard him as a friend."

Photography as a hobby offers so many highways and byways of interest to tempt one's imagination and ingenuity that it can change, chameleon-like, from a leisure-hour activity to an all absorbing interest. It is a key which opens doors into realms undreamed of—realms of pure delight and creative opportunity, comments Mabel Osler Priest in a recent number of *Child Welfare.*

Found!
...the easy way to
UNDER-ARM FRESHNESS

PERSTIK—the Dainty New
Deodorant applied like a Lipstick

Perstik is the year's cosmetic sensation because it is easy to use and easy to carry in your purse.

A touch or two of Perstik each morning gives *instant* and *lasting* protection against under-arm odor. The mild astringent action of Perstik reduces excess perspiration in a delightfully simple and harmless manner.

Perstik may be used after shaving. *It never irritates!* It never injures or stains clothing. Apply Perstik and slip right into your dress.

A 50c Perstik lasts months. Try this sanitary, handy deodorant stick in its smart black-and-white enamelled case, the size of a lipstick. Get Perstik where you buy your cosmetics. Or, write—

Perstik, 469 Fifth Ave., New York City

Perstik
THE "LIPSTICK" DEODORANT

Endorsed by Good Housekeeping Institute

Trade Mark Reg. U. S. Pat. Off. Patents Pending

HOBBIES OFFER ESCAPE FROM BOREDOM FOR TEEN AGE

"As in other respects so in the use of leisure time every adolescent is a law unto himself," declares Marie Spottswood in *Child Study.* "Reading, dramatics, writing, sports, hiking, music, activities that give an opportunity to work with the hands—these and many others are to be found claiming the wholehearted attention of both boys and girls from twelve to twenty."

The most engaging hobby of the teen age is reading, but many parents are not aware of how much their participation may enrich the reading experiences of adolescent children. One boy, 16 years old, whose books are his choicest hobby, says that reading a good book may give him a few hours' pleasure but the books that really live and become a part of him are those which he discusses with others, especially with his parents.

The early teens are years of exploration in hobbies. Such hobbies as photography, wood carving, bookbinding, pottery making or clay modeling can be enthusiastically engaged in during these years. Experimentation, construction and art expression often find their birth at this age.

Girls' interests in sports begin to wane at the age of 15 or 16. Parents should decidedly encourage sport activities in their daughters. One family found it fun to have family skating parties to which friends were invited. The party ended with refreshments and additional activity at home.

Collections provide fine hobbies for the teen age. An adult book lover confesses that his interest in collecting began with white rats and was transferred to postage stamps, cigarette pictures and finally to books.

Alcohol, jazz, petting and lavish spending are sought by youths who simply are bored. Real creative activity is often hard to foster, but it is a more constructive and complete escape from boredom.

CORRECTION

In "Eye Hygiene and Heat," an article by Dr. Sol Rosenblatt, appearing in the December, 1932, issue of HYGEIA, the following statement was made: "Bates ended in an insane asylum." Bates, the originator of the so-called central fixation system, which advocated the discarding of glasses, died at his home, July 10, 1931, of brain abscess following an operation for acute suppurative ethmoiditis.

RULES FOR HEALTHFUL LIVING ARE HABIT FORMING

Ten rules for healthful living are enumerated by the Massachusetts department of public health, as follows:

1. *Food.*—Milk; cereals; vegetables including leafy ones, such as lettuce, spinach, beet tops, to get the necessary vitamins; fruit every day; eggs; meat in moderation; sweets in moderation; six glasses of water a day.

2. *Exercise.*—Enough every day to sweat freely. Walk three miles a day if you are unable to do anything better. Play in the open air.

3. *Posture.*—Stand and sit straight; stand tall, keep head up, chin in, chest out, abdomen in, back straight, shoulders back; walk largely on balls of feet, with feet straight—not turned out.

4. *Rest.*—When tired. Never eat a hearty meal when tired. Sleep at least eight hours each night with windows open.

5. *Mouth.*—Brush teeth after meals and at bedtime. Keep the mouth clean. Salt and water is a good mouth wash.

6. *Bowels.*—One good bowel movement a day, preferably after breakfast. Many a headachy, ailing individual owes his troubles to constipation. Coarse cereals, vegetables, fruits—like apples and prunes—and plenty of water will usually ward off constipation. Don't use drugs.

7. *Baths.*—A cold bath every day if it makes you feel good, otherwise a tepid bath. A warm cleansing bath once a week.

8. *Clothing.*—Suitable to the season; it should not be too heavy or too tight.

9. *Communicable Disease.*—Practice good health habits; avoid the careless spitter and sneezer, the common drinking cup or towel; eat and drink only clean food. Keep your fingers away from your mouth.

10. *Mental Hygiene.*—In many ways most important of all. Refuse to worry and hurry. Be calm. Control your emotions.

If some of these good health habits are not a part of your daily regimen, start new habits immediately. A good habit is just as easy to form as a bad one, and it is equally hard to break.

"Medical care costs the average person in the United States about $25 a year. This is about the amount paid for gasoline and less than for cosmetics," says Dr. David Kaliski, president of the New York County Medical Society.

RAW, TENDER NOSE

and no wonder!

Rubbed, inflamed with harsh, damp handkerchiefs, when it should be gently treated with

KLEENEX

Soft, absorbent—now costs but 25c

MUCH of the misery of a cold comes from irritation caused by damp handkerchiefs.

This discomfort can so easily be avoided by the use of Kleenex. Kleenex is a soft, cloth-like tissue, smooth as velvet to the touch. It is many times more absorbent than cotton or linen.

Since the cost of Kleenex is very low, a tissue need be used but once. Thus, you have a clean tissue every time—soft, absorbent, soothing and *dry*.

Much more healthful

Kleenex is not only more comfortable, it is infinitely more sanitary. A cold-filled handkerchief reinfects the user, spreads infection to others. Kleenex fibers are so powerfully absorbent that they hold germs tightly, so they remain harmless until the Kleenex can be destroyed.

No disagreeable laundering

When you use Kleenex there's no disagreeable handkerchief washing, no laundry bills for handkerchiefs. The soiled tissues are destroyed, not stored away in bags or hampers, to be washed with other clothing. And this hygienic Kleenex habit actually costs less than having handkerchiefs laundered!

Kleenex now comes in rolls and household packages at 25 cents; in extra-size tissues; and in smartly bordered handkerchiefs called 'Kerfs. At drug, dry goods and department stores.

KLEENEX *disposable* **TISSUES**

PYREX *Nursing Bottles*

Now wrapped in Baby Blue or Pink Cartons

YOU'LL want to give Pyrex Nursing Bottles to every baby you know when you see what sweet gifts they make in their new wraps.

Each bottle now comes in a very dashing pink or blue carton with a silver label.

These bottles are made of the famous Pyrex brand glass that's resistant to the hottest water or coldest refrigerator. There's practically never any breakage to upset the feeding schedule. This is why prominent pediatricians suggest Pyrex Nursing Bottles.

Mothers love them. Just *six* Pyrex Nursing Bottles are generally sufficient to see your baby through the nursing period.

Two sizes . . . 8-oz., with narrow neck or wide mouth, at 25¢; 4-oz., with narrow neck, at 15¢.

"Pyrex" is the registered trade-mark of Corning Glass Works, Corning, N. Y., and indicates their brand of resistant glass. These prices are in effect in the United States only.

The A.P.-UPLIFT

U. S. Pat. 1,702,922 —Invented by Mme. Poix to create the stylish upward contour; to relieve pain and remove cause of many bust troubles; also for pre-natal and nursing periods.

Sizes 30 to 44
Pink Repp.....$1.00
Pink Tussah Silk... 1.50
Pink Mesh or Jersey 2.00

If not at dealers, order direct giving exact bust measure next to skin. Booklet free on request.

G. M. POIX, Inc.
103 Madison Ave.
New York, N. Y.

Thumb-Sucking

STOPPED THE NEW WAY

Simply apply BITE-X to thumbs or finger tips. It instantly forms a tough transparent coating unpalatable to taste. Also stops nail biting. Renders unnecessary the use of metal cages. Approved by child specialists and Good Housekeeping Magazine.

Satisfactory Results or Money Refunded
MAIL $1.00 to Dept. 42
Child Welfare Guild, 468 4th Ave., New York

DRIVER GOES ONE MILLION MILES WITHOUT MISHAP

One million miles without a mishap! Ab Jenkins, a driver who has been awarded more official driving records than any other man, is most proud of his record of no accidents during 1 million miles of driving. As the speedometer turned over the millionth mile, Jenkins realized that all those miles had been registered without an accident. Not that there were not many close calls and breathless moments, caused either by the carelessness of others or by errors of his own! About safety and personal responsibility, Jenkins says:

"But with every added mile of driving, there has come a growing recognition of the responsibility a driver should assume on our streets and highways. Most people are reckless, not with any degree of malicious intent or because they have no regard for their own or others' welfare, but largely because they have never been imbued with the true sense of responsibility."

Ab Jenkins in *Public Safety* enumerates six points which are rules of safety in driving:

1. Accept responsibility.
2. Be alert.
3. Know the fundamentals of safe driving and practice them.
4. Keep your car in first class mechanical condition.
5. Cultivate regard for the rights of others.
6. Do not stand too securely on your own rights; safety is the main objective.

WORLD-WIDE REPUTATION
INGRAM'S *Transparent Sanitary* NIPPLES

Made in England by secret process and never equalled. Light but very durable, feeding always uniform, reinforced band prevents slipping. Sample free.
ERNEST MONNIER, Inc., Dept. 15.
127 Federal St., Boston.

Schools and Camps

Schools for Backward Children

<> TROWBRIDGE TRAINING SCHOOL <>

Home school for nervous, backward children. *Best in the West.* Beautiful buildings. Spacious grounds. Experienced teachers. Individual supervision. Resident physician. Enrolment limited. Endorsed by physicians, educators. Booklet. E. Haydn Trowbridge, M.D., 1810 Bryant Bldg., Kansas City, Mo.

Beverly Farm (INC.) *A Home and School for Nervous and Backward Children and Adults*

220 acre farm. 7 bldgs. New school gymnasium. 35th year. Industrial and school training given. Dept. for birth injury cases. GROVES BLAKE SMITH, M.D., Supt. **Godfrey, Ill.**

WASH THEIR HAIR *Once a Week!*

Regardless of season, the *weekly* DERBAC Shampoo is safe for children.

Use DERBAC in *Silver Package* for dandruff and scalp infections. *Gold Package* for general hair health and hair beauty.

Physicians and Nurses: Send 10c for 25c size trial cake.

Derbac SPEED SHAMPOOS

CEREAL SOAPS CO., Inc. *Dept. H-2,* 334 E. 27th Street, NEW YORK

SAFETY EDUCATION MAGAZINE

For teachers and pupils

$1.00 a Year

Supplies you with safety material throughout the school year — lesson plans, stories, plays, informational articles and colored poster supplement.

ONE PARK AVE., NEW YORK CITY

WATCH WINTER COLDS

Eternal vigilance is the price of a cold-free family. Follow your physician's advice on cold prevention. If he recommends a solution, use a DeVilbiss Atomizer. They are stocked by every drug store and for 43 years, have been used and recommended by the medical profession.

DeVilbiss

★ ★ ★

The DeVilbiss Company, Toledo, Ohio, headquarters for atomizers and vaporizers for professional and home use.

Accepted by the Council on Physical Therapy of the American Medical Association

ANNUAL BOY SCOUT WEEK TO BE OBSERVED

Boy Scout Week, which is to be celebrated throughout the United States by scouts and scout leaders, Feb. 8-14, 1933, marks the twenty-third anniversary of the Boy Scout movement in America.

The purposes of this movement have been character building and citizenship training. Around these objectives are built the Scout Oath and the Scout Law.

The Boy Scout movement has been an effective agency in the lives of millions of boys; its future program is even broader and more complete than has been its past program.

HEALTH EDUCATION

through SUPPLEMENTARY MATERIALS

Send for free descriptive catalog

Address:
Health Education Department
DAIRYMEN'S LEAGUE
CO-OPERATIVE ASSOCIATION, Inc.
11 West 42nd Street,
New York, N. Y.

Elmo BEAUTY PREPARATIONS

FOR *Healthful* Beauty

No matter how delicate your skin is, you can safely use Elmo beauty preparations. Repeated chemical analyses show the absence of any ingredient that could possibly harm the normal skin. In fact, Elmo toiletries are as pure as it is humanly possible to make them.

For the sake of your health as well as your beauty, use Elmo beauty preparations—there's one for every need:

ELMO

RA-LO LOTION	CLEANSING CREAM
TISSUE CREAM	CUCUMBER CREAM
MELTING CREAM	TONIC ASTRINGENT
SKIN FRESHENER	RA-LO FACE POWDER

At Drug Stores and Department Stores

ELMO, Incorporated

21st Street and Hunting Park Avenue
Philadelphia - - Pennsylvania

BEWARE— WHEN YOUR CHILD GROWS TOO FAST

He must fill out, too— or face the dangers of undernutrition

By Ruth Carey Smith
Director of Food Research

EVERY MOTHER wants her child to grow straight and tall. But most mothers fail to realize how important it is for a child to *fill out* while he is growing.

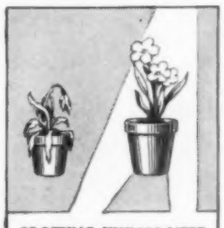
If a youngster seems scrawny and a bit too thin for his height, his mother is more likely than not to say, "Oh, Junior's growing now! He'll fill out later!"

But later she wonders why Junior hasn't more vitality. She wonders why he can't hold his own with his little playmates—why he becomes tired so easily — and cranky —and listless.

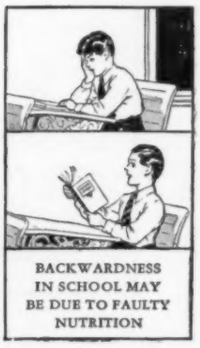
How to Safeguard the Growing Child

The child who grows fast without filling out is not properly nourished. Everything goes into muscle and bone—and general resistance suffers.

Today thousands of mothers safeguard their growing children by giving them Cocomalt in milk at every meal. For Cocomalt not only makes milk as alluring as chocolate soda to youngsters, but, prepared as directed, *it provides almost twice the food-energy nourishment of milk alone.*



GROWING THINGS NEED SUNSHINE—EVERY GROWING CHILD NEEDS SUNSHINE VITAMIN D



BACKWARDNESS IN SCHOOL MAY BE DUE TO FAULTY NUTRITION

When you mix Cocomalt with milk as directed, you add 70% more food-energy value. You give the child *extra* proteins, carbohydrates, calcium and phosphorus. You give the child a rich supply of Sunshine Vitamin D which acts to make the calcium form strong bones and teeth — aids growth and development.

Accepted by the Committee on Foods of the American Medical Association

Cocomalt is based on years of scientific study and research. It is accepted by the Committee on Foods of the American Medical Association, an association comprising more than 100,000 physicians. *That is your best guarantee of its purity as a food and the honesty of its advertised claims.*

Don't be fooled by misleading substitutes which do not supply Sunshine Vitamin D and all other valuable Cocomalt elements. Look for this seal on the Cocomalt can.

ACCEPTED AMERICAN MEDICAL ASSN. Committee on Foods

Special Offer to Mothers

The makers of Cocomalt will send you a trial-size can, enough for the whole family to enjoy. Mail coupon and 10c to cover cost of packing and mailing.

R. B. DAVIS COMPANY,
Dept. K2, Hoboken, N. J.
Please send me a trial-size can of Cocomalt. I enclose 10c to cover packing and mailing cost.

Name _____
Address _____
City _____ State _____

EXPECTANT MOTHERS

■ The careful doctor gives his prospective maternity case a kidney test every few weeks. In this period, the kidneys have a double elimination problem; naturally, they are overworked.

The caffeine in ordinary coffee may add to their burden. It may also affect your heart and nerves. You can help the doctor by giving up caffeine; but you need not penalize yourself by giving up coffee.

Just switch to Kellogg's Kaffee-Hag Coffee (97% caffeine-free). That will please both you and your doctor. Kaffee-Hag Coffee is a delicious blend of Brazilian and Colombian coffees, with nothing lost but the caffeine (and it's tasteless).

For a few days, your nerves *may* miss their caffeine. After that, you'll feel much calmer,—and you'll still be enjoying coffee, real coffee, to your heart's content.

Ground or in the Bean . . . Roasted by Kellogg in Battle Creek. Vacuum packed. Satisfaction guaranteed.

Sign, Tear Off and Mail This Coupon Now!

Try Kellogg's Kaffee-Hag Coffee. Buy from your grocer. Or, send 15 cents in stamps for a can of Kaffee-Hag. Use this coupon.

HYU 2

KELLOGG COMPANY, Battle Creek, Mich.
Please send me a can of Kellogg's Kaffee-Hag Coffee (97% caffeine-free). I enclose 15c in stamps.

Mrs.....
Street.....
City.....
State.....

Wanted!

HYGEIA AGENTS

Convert your spare time into cash

Represent

HYGEIA

in your neighborhood. College students, office workers, housewives, teachers and many others are adding to their regular income by working evenings and spare hours - - - So can you!

Everybody is interested in health.

Everybody can profit by the straightforward, scientific, fascinating health talks in **HYGEIA.**

You will enjoy being the one to introduce them.

Liberal Commission and Bonus Paid to Representatives

MAKE THIS A PROFITABLE YEAR!
SEND THE COUPON BELOW:

HYGEIA Circulation Department,
535 N. Dearborn St., Chicago, Ill.

I am interested in your offer to HYGEIA representatives. Send me full details about your proposition.

Name .....

Address .....

.....

Present Occupation.....

Are you interested in full or part time work?

.....

When could you begin work?.....

MARTYRS TO SCIENCE

The martyrs to science have been many. Dr. William B. Brebner lost his life recently in an effort to find the cause and cure of infantile paralysis in order that children might be saved from death or from being crippled for life. Dr. Brebner died as the result of transverse myelitis caused by the bite of a monkey. He was the first to lose his life in 1932 in the bureau of laboratories of the department of health of New York City, although several others in the years that have passed have jeopardized or sacrificed their lives in the interests of scientific research. These persons included victims of typhus fever, influenza, typhoid, parrot fever and diphtheria.

PLANNING WORK, PLAY GIVES ROUNDED HOURS

"Back of every great achievement there is endless detail and planning. The great bridge that spans a river, the vast building that rises in lovely majesty, or the sturdy airplane that sweeps the skies, have back of them an endless detail of blueprints, mechanical drawings, mathematical calculations, factory schedules. . . . The wise student plans his daily and weekly work as carefully as he solves his problems in algebra or chemistry or mechanics. He makes a schedule, tries it, adapts it, sticks to it, and in consequence is able to do many times as much as the slipshod and haphazard student. By planning your time carefully, you will find a place for generous leisure, for happy companionship and for relaxation and meditation, which are the marks of a well balanced mind," *The Journal of the National Education Association* states.

SO YOUTH MAY KNOW

New Viewpoints on Sex and Love

By

Roy E. Dickerson

was written to meet the need for a book that parents, teachers and doctors could safely recommend.

"the author combines authentic data with sound philosophy, in keeping with best modern thought. Above all, his emphasis on decency and cleanliness makes a book we can safely recommend to boys from early teens on."

—American Journal of Public Health.

Recommended by American Social Hygiene Association, Child Study Association, American Library Association.

At your booksellers or direct from **Cloth $2.00 Paper $1.25**

ASSOCIATION PRESS

347 Madison Avenue New York, N. Y.

Once too often he forgot about clean hands

. . . but the wash-up game taught him to remember

TALK ABOUT tough luck! A new pair of skates—freezing weather at last—the whole gang trooping by—and here he was cooped up with a cold! . . . He hadn't realized that forgetting to wash his hands could spoil his good times! But he's learned that lesson now, thanks to the Lifebuoy Wash-Up Chart.

A real health aid

In words and pictures the Lifebuoy Wash-Up Chart shows how hands pick up germs from practically everything we touch. Teaches why it's so important to wash hands often—*always before meals*—with Lifebuoy, the purifying toilet soap. For Lifebuoy removes not only dirt, but *germs* as well. A wonderful safeguard against the 27 germ diseases which the Life Extension Institute says may be spread by hands.

Children like the big coral-pink cake of Lifebuoy with its creamy plentiful lather. And how quickly the Wash-Up Chart, by changing a duty to a game—turns children who are confirmed soap haters into ardent soap "fans". The lure of a perfect clean hands score makes forgetting impossible.

Promotes skin beauty

Skin loveliness depends on skin health. The bland penetrating cleanliness of Lifebuoy Soap frees pores of impurities—keeps complexion clear. Lifebuoy's *extra-clean*, quickly-vanishing scent tells you it is no ordinary soap. Its rich, hygienic lather deodorizes as it cleanses—checks "B.O." (*body odor*).

FREE: Send for Free Wash-Up Chart, and trial size cake of Lifebuoy Soap for each of your children. Fill out and mail coupon below now. You'll have no more worries about clean hands.

LIFEBUOY

HEALTH SOAP

for face, hands, bath

free

LEVER BROTHERS CO., Dept. 192, Cambridge, Mass.

Please send me, free, Lifebuoy trial cakes and "Wash-up" Charts for my _____ children.

Name _____

Address _____

City _____ *State* _____

"CASE No. 10,000"

The office secretary of the Oxford Visiting Nurse Association muses as she notes her record card of Case No. 10,000—and the mental notations which she makes simultaneously create a living, gripping tale, a tale of service and accomplishment.

Behind the absorbing interest of the story is a purpose—to show how a Visiting Nurse Association functions and the need of such service at the present time. The work of these nurses will prøve a revelation to many readers!

Also Coming in the March HYGEIA:

"SOME REACTION TYPES TO THE ECONOMIC DEPRESSION"

Dr. Franz Alexander's clear, sensible presentation of psychological factors in the depression will help the layman to a better understanding of the aims of the psychoanalyst. Don't miss this timely article on a topic of absorbing interest!

"DIVIDENDS OF HEALTH"

"Everything from a man's ability to digest raw onions to his ability to accept disagreeable facts and to get along with disagreeable people depends largely upon the precise kind of health he has," writes Walter B. Pitkin. Read his attributes of a healthy man—and check up your own score!

"PROGRESS IN PREVENTIVE MEDICINE"

In this first installment of a fascinating serial, Dr. P. M. Ashburn, librarian of the Army Medical Library, begins tracing the development of education in the prevention of disease and tells the thrilling story of the control of smallpox.

OTHER ARTICLES—

Dr. Thomas M. French writes on **"INDICATIONS AND LIMITATIONS OF THERAPY"** . . . Mothers of babies and small toddlers will find helpful advice in Dr. Joseph H. Marcus' article, **"YOU CAN'T BEGIN TOO SOON!"** . . . E. M. Geraghty gives a world of information on **"STORAGE AND PRESERVATION OF FOOD"** . . . And these are only a few of the good things in store for readers of the February HYGEIA. If you are not already a subscriber, take advantage of the offer below!

AMERICAN MEDICAL ASSOCIATION H-2-33
535 N. Dearborn St., Chicago

Enclosed is $1.00 for an introductory 6 months' subscription to HYGEIA, The Health Magazine. I am a new subscriber.

Name.....

Address.....

For New Subscribers—

INTRODUCTORY
6 months of
HYGEIA

$1

Regular Subscription $2.50 a Year